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HS-803-838

PERFORMANCE CHARACTERISTICS OF AUTOMOTIVE ENGINES IN THE UNITED STATES

Third Series - Report No. 9
1978 Ford, 300 CID (4.9 Liter), IV

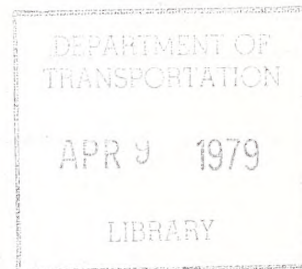
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BARTLESVILLE ENERGY TECHNOLOGY CENTER
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FEBRUARY 1979

INTERIM REPORT



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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
Office of Research and Development
Washington DC 20590

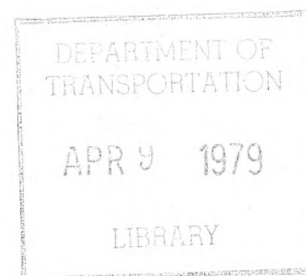
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16. Abstract Experimental data were obtained in dynamometer tests of a 1978 Ford 300 CID truck engine to determine fuel consumption and emissions (hydrocarbon, carbon monoxide, oxides of nitrogen) at steady-state engine operating modes. The objective of the program is to obtain engine performance data for estimating emissions and fuel economy for varied engine service and duty. The intent of the work is to provide basic engine characteristic data required as input for engineering calculations involving ground transportation.					
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PREFACE

This report was prepared by the U.S. Department of Energy, Bartlesville Energy Technology Center, for the U.S. Department of Transportation, Transportation Systems Center, Energy Technology Branch, Cambridge, MA. Presented are results of experimental work to obtain information on performance characteristics of an engine used in automobiles and light trucks sold in the United States. The Ford 300 CID truck engine used in this work is one of a series of 15 engines to be presented in the current program. This is the ninth of the reports to be published covering work with those engines.

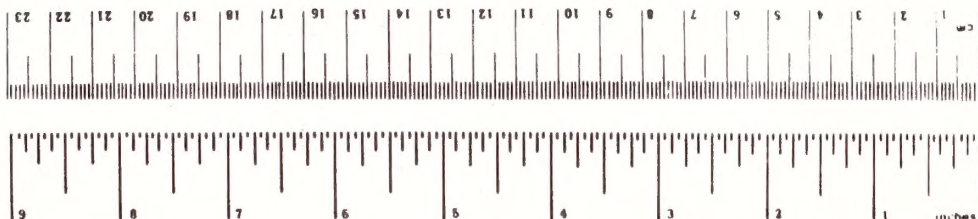
This project is funded by the National Highway Traffic Safety Administration, Office of Research and Development, Office of Passenger Vehicle Research, Technology Assessment Division.

James A. Kidd, Jr. and Ralph G. Colello of the U.S. Department of Transportation, Transportation Systems Center, are the technical monitors.

METRIC CONVERSION FACTORS

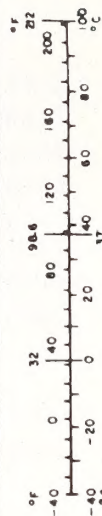
Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
AREA				
in ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	0.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
VOLUME				
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft ³	cubic feet	0.03	cubic meters	m ³
yd ³	cubic yards	0.76	cubic meters	m ³
TEMPERATURE (exact)				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
AREA				
cm ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
km ²	square kilometers	0.4	square miles	mi ²
ha	hectares (10,000 m ²)	2.5	acres	
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m ³	cubic meters	35	cubic feet	ft ³
m ³	cubic meters	1.3	cubic yards	yd ³
TEMPERATURE (exact)				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



1. INTRODUCTION

The objective of this program is to obtain engine performance data for estimating fuel economy and emissions for varied engine service and duty. The intent of the work done at the Bartlesville Engine Technology Center is to provide basic engine characteristic data required as input for engineering calculations of fuel consumption and emissions involving ground transportation.

The data acquired from tests of a 1978 Ford 300 CID truck are presented in this report. The engine, as equipped, is intended for use in a forty-nine state (Federal) pickup or van with automatic transmission. Ford uses the 300 CID truck engine in pickups and vans in the 4,000 to 4,500 lb weight class. The test results are sufficient to establish steady-state maps for fuel consumption and emissions (carbon monoxide, unburned hydrocarbon, and oxides of nitrogen) over the entire operating range of the engine.

2. ENGINE TEST REPORT

The engine test setup included a complete mean-tolerance engine (SAE definition) coupled to an eddy-current dynamometer. A cooling tower was used in place of the fan and radiator. The alternator was included but was not wired into the engine's electrical system. Emission control systems included exhaust-gas-recirculation (EGR), positive crankcase ventilation, pulse air system, and an oxidation catalyst. The manufacturer's engine specifications are listed in Table 1.

Prior to testing, engine break-in consisted of 40 hours of operation at various speeds and loads representative of normal engine operation. Table 2 contains details of the break-in schedule. A single batch of unleaded regular grade gasoline was used throughout the break-in and tests; a detailed fuel analysis is given in Table 3. Engine tests began on July 10, 1978, and ended on July 18, 1978. During steady-state tests the engine was operated at the following speed/load modes:

Speeds: 1,000; 1,200; 1,400; 1,600; 2,000; 2,400; 2,800;
3,200 rpm

Loads: 0, 10, 25, 40, 60, 75, 90, 100 pct of full load
(0, 10, 25, 60, and 75 pct points were repeated
for all engine speeds)

Idle speed/load modes: 800 rpm -- 0, 10, 15 lb-ft
550 rpm -- 32 lb-ft

Over-speed mode: 3,400 rpm -- 177 lb-ft (WOT)

Total number of test modes.....	69
Total number of repeats.....	44
Total number of tests.....	113

The following data were recorded for each test point:

Test number
Data source code (1 = before catalyst, 2 = after catalyst)
Date
Barometric pressure, mm Hg
Wet bulb temperature, °F
Dry bulb temperature, °F
Inlet air temperature, °F
Speed, rpm
Torque, lb-ft -- Daytronic strain gauge load cell
Fuel rate, lb/hr -- Fluidyne positive displacement fuel flow meter
Ignition timing, °BTC
Manifold vacuum, in. Hg
Throttle angle, degrees
CO, pct -- Beckman NDIR
CO₂, pct -- Beckman NDIR
O₂, pct -- Beckman polarographic detector
HC, ppmC -- Custom-built heated flame ionization detector

NO_x , ppm -- Thermo-Electron chemiluminescent detector
 Oil temperature, $^{\circ}\text{F}$
 Oil pressure, psig
 Coolant temperature, $^{\circ}\text{F}$
 Exhaust temperature, $^{\circ}\text{F}$
 Exhaust pressure, in. H_2O
 Intake manifold temperature, $^{\circ}\text{F}$

The following equations were used in calculating power, air-fuel ratio, absolute humidity, and mass emission rates of carbon monoxide (CO), unburned hydrocarbons (HC), and oxides of nitrogen (NO_x):

1. Partial pressure of water vapor in intake air (millimeters of mercury):

$$P = \exp \left[18.717 - \frac{7308.1}{393 + D} \right]$$

where D = Dew point, $^{\circ}\text{F}$

2. Absolute humidity (grains moisture per pound dry air):

$$H = \frac{4347.8(P)}{B - P}$$

where B = Barometric pressure, mm Hg

3. Humidity correction factor (dimensionless):

$$K_H = \frac{1}{1 - 0.0047(H - 75)}$$

Note: This factor is used to correct the NO_x mass emission rate to a standard humidity of 75 grains moisture per pound dry air.

4. Hydrogen concentration in raw exhaust (percent):

$$H_2 = \frac{x(\text{CO}) (\text{CO} + \text{CO}_2)}{2(\text{CO} + 3\text{CO}_2)}$$

where CO = Carbon monoxide concentration (percent)
 CO_2 = Carbon dioxide concentration (percent)

Note: This equation assumes a water-gas shift equilibrium constant

$$\frac{(CO)(H_2O)}{(CO_2)(H_2)} = 3$$

5. Correction factor for emission concentrations from wet basis to dry basis (dimensionless):

$$C_w = 1 + \frac{(x/2)(CO + CO_2) - H_2}{100}$$

Note: In these tests only HC is measured on a wet basis. All other species are measured on a dry basis.

6. Air-fuel ratio (dimensionless):

$$AF = \frac{68.9994}{MW_{fuel}} \left[\frac{(1 + \frac{x}{2} - y)(CO) + (2 + \frac{x}{2} - y)(CO_2) + 2(O_2) + \frac{NO_x}{10^4} - H_2}{CO + CO_2 + C_w (HC/10^4)} \right]$$

where O_2 = Oxygen concentration (percent)

NO_x = Oxides of nitrogen (ppm)

HC = Unburned hydrocarbon concentration (ppmC)

x = Fuel hydrogen/carbon atomic ratio

y = Fuel oxygen/carbon atomic ratio

MW_{fuel} = Fuel molecular weight per carbon atom

= $12.01115 + 1.00797x + 15.9994y$

7. Carbon monoxide mass emission rate (grams per hour):

$$M_{CO} = \left(\frac{MW_{CO}}{MW_{fuel}} \right) \left[\frac{\%CO (M_f)}{\%CO + \%CO_2 + C_w(\%HC)} \right] (453.59237)$$

MW_{CO} = Molecular weight of CO (28.01055)

M_f = Fuel rate in lb/hour

$\%HC$ = $HC(ppm)/10^4$

8. Unburned hydrocarbon mass emission rate (grams per hour):

$$M_{HC} = \left(\frac{MW_{HC}}{MW_{fuel}} \right) \left[\frac{(\%HC) (M_f) (C_w)}{\%CO + \%CO_2 + C_w(\%HC)} \right] (453.59237)$$

MW_{HC} = Molecular weight of hydrocarbon per carbon atom
= $12.01115 + 1.00797x + 15.9994y$

9. Oxides of nitrogen mass emission rate (grams per hour):

$$M_{NO_x} = \left(\frac{MW_{NO_x}}{MW_{fuel}} \right) \left[\frac{\%NO_x + M_f}{\%CO + \%CO_2 + C_w(\%HC)} \right] (453.59237) (K_H)$$

MW_{NO_x} = Molecular weight of NO_2 = 46.0055

$\%NO_x$ = $NO_x(\text{ppm})/10^4$

10. Power (brake horsepower corrected to a standard barometric pressure of 736.6 mm Hg and a standard temperature of 85° F):

$$HP = \left(\frac{N(T)}{5252.113} \right) \left(\frac{736.6}{B - P} \right) \sqrt{\frac{t + 460}{545}}$$

where N = Engine speed (revolutions per minute)

T = Brake torque (lb-ft)

t = Air temperature (°F)

3. DISCUSSION OF TEST RESULTS

Maximum corrected brake horsepower, maximum torque, and brake specific fuel consumption (bsfc) are plotted as a function of engine speed at wide-open-throttle (WOT) in Figure 1. The maximum brake horsepower and the maximum torque produced by the engine were similar to the values quoted in Table 1 and were found at the specified speeds. Minimum bsfc and maximum torque occurred at the same speed/load mode indicating a high efficiency mode.

Fuel rates were found to be nearly a linear function of power for most engine speeds (Figure 2) and were repeatable for all speeds duplicated. The calculated air-fuel ratios were slightly higher than the actual stoichiometry in the combustion chamber due to the injection of air into the exhaust manifold by the pulse air system (Figure 3). The air-fuel ratios were repeatable for all speeds duplicated.

Emissions of CO, HC, and NO_x are plotted as a function of power for all engine speeds (Figures 4 thru 6). The oxidation catalyst effectively reduced emissions of CO and HC at all engine speeds except those at which the air-fuel ratios were relatively low. The low air-fuel ratios and the high emission levels of CO and HC, at these modes, indicate a lack of available oxygen to support the oxidation process, thus reducing the effectiveness of the catalyst. The emissions of NO_x tended to increase with load up to 40 percent of full load, decrease at 60 percent, and then increase from 60 to 100 percent. The change in the amount of NO_x produced by the engine is affected by the air-fuel ratio and the exhaust-gas-recirculation (EGR) rate. For speeds from 1,000 to 2,000 rpm, the EGR rate increased with load up to approximately 60 percent of full load; thereafter it decreased. For speeds from 2,400 to 3,200 rpm the EGR rate was maximum at zero load and continued to decrease as power output increased. The air-fuel ratios at the 0 to 40 percent load modes for all speeds are believed to be slightly lean of stoichiometric. Operation of air-fuel ratios slightly lean of stoichiometric typically produce high concentrations of NO_x. Emission characteristics of this engine are typical for a spark-ignition engine.

4. CONCLUSIONS

The experimental work to obtain performance data for the Ford 300-CID truck engine has been completed; these data are presented in the tables accompanying this report.

TABLE 1. MANUFACTURER'S ENGINE SPECIFICATIONS

Displacement, cubic inches.....	300
Maximum horsepower, bhp @ 3,200 rpm.....	120
Maximum torque, lb-ft @ 1,600 rpm.....	252
Bore and stroke, inches.....	4.00 x 3.98
Configuration.....	overhead valve, inline 6-cylinder
Compression ratio.....	8.9 to 1
Firing order.....	1-5-3-6-2-4
Ignition timing at idle speed, ° @ 550 rpm.....	10
Block material.....	cast iron
Head material.....	cast iron
Number of crankshaft main bearings.....	7
Number of compression rings/piston.....	2
Number of oil rings/piston.....	1
Cam drive type.....	gear drive
Valve lift:	
Intake, inches.....	0.404
Exhaust, inches.....	0.406
Valve timing:	
Intake opens, °BTC.....	18
Intake closes, °ABC.....	70
Exhaust opens, °BBC.....	58
Exhaust closes, °ATC.....	30
Spark plug gap, inches.....	0.044
Engine weight, lbs.....	540
Exhaust-gas-recirculation system:	
Valve type.....	integral transducer backpressure
Control signal.....	ported vacuum
Point of discharge.....	intake manifold
Crankcase emission control:	
Control method.....	positive crankcase ventilation
Point of discharge.....	baseplate of carburetor
Carburetor type.....	1V downdraft
Distributor specifications:*	
Centrifugal advance, begins, ° @ 450 rpm....	0
Centrifugal advance, intermediate, ° @ 910 rpm.....	14
Centrifugal advance, full, ° @ 1,525 rpm....	20
Vacuum advance, begins, ° @ 8 in. Hg.....	0
Vacuum advance, maximum, ° @ 21 in. Hg.....	5
Carburetor number.....	D8TE-BWA-G-8-B-22
Distributor number.....	DS 2417

*Distributor rpm, crankshaft degrees, wide-open-throttle.

TABLE 2. ENGINE BREAK-IN SCHEDULE

Simulated vehicle speed, mph	Engine speed, rpm	Intake manifold vacuum, in. Hg	Fraction of time in mode
Idle	550	8	1/10
20	800	8	"
30	1,000	13	"
40	1,300	18	"
50	1,600	18	"
60	2,000	17.5	"
25	950	11	"
35	1,100	16.5	"
45	1,450	18.5	"
55	1,800	18	"

Mileage per cycle = 90 miles.

Total mileage accumulated over 40 hour break-in period = 1,440 miles.

TABLE 3. FUEL ANALYSIS

Fuel No.....	7718
Research octane No.....	91.8
Motor octane No.....	84.0
Specific gravity.....	0.717
API gravity, degrees.....	65.9
Distillation, °F:	
10 pct evaporated.....	123
50 pct ".....	209
95 pct ".....	402
100 pct ".....	413
Reid vapor pressure, psi.....	11.26
FIA analysis, pct:	
Aromatics.....	9
Olefins.....	15
Paraffins.....	76
Sulfur, pct.....	0.016
Lead, grams per gallon.....	Trace
Hydrogen/carbon atomic ratio.....	2.038

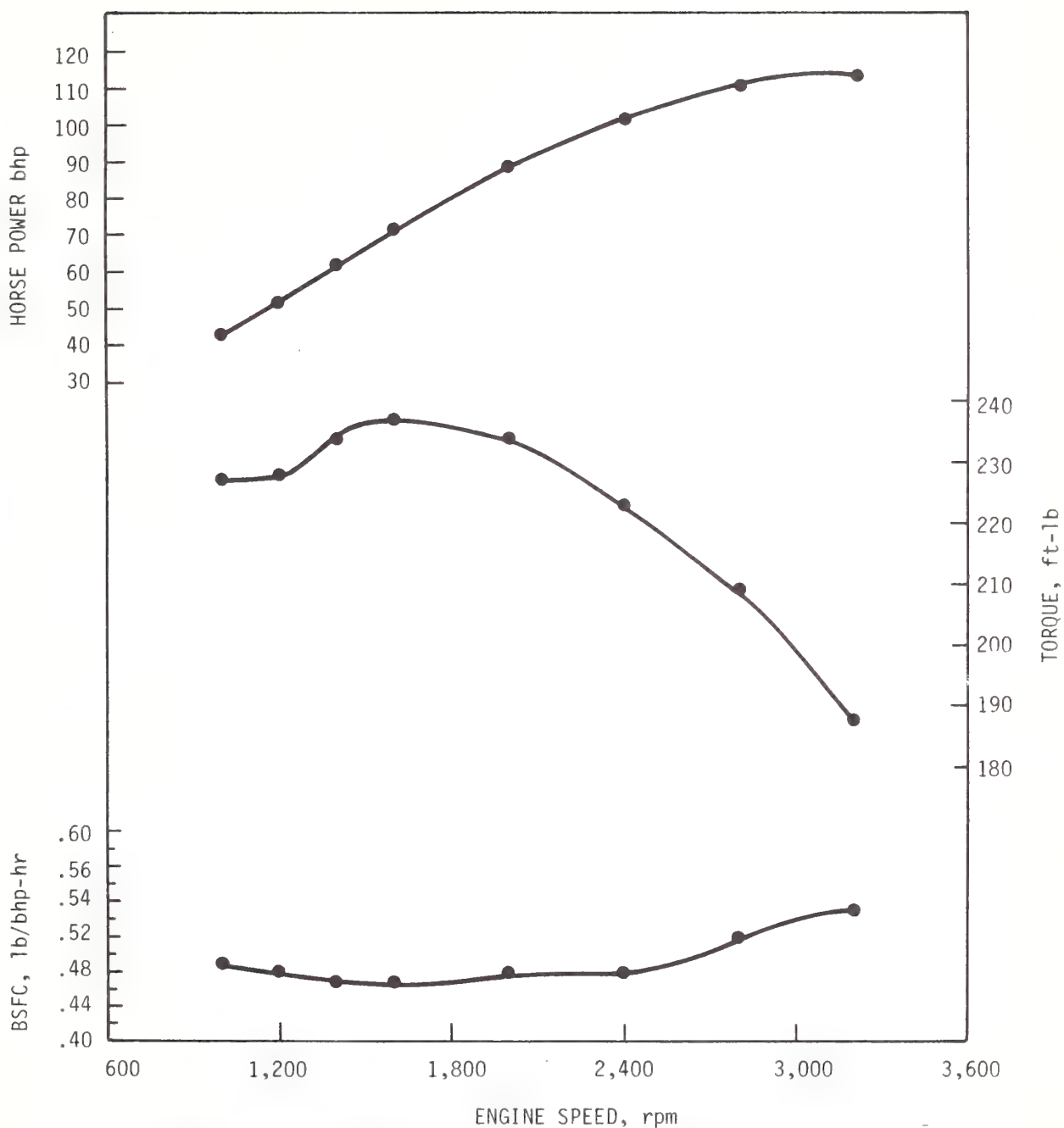


FIGURE 1. Brake Specific Fuel Consumption, Torque, and Brake Horsepower Versus Engine rpm at Wide-Open-Throttle--Ford 300 CID Truck Engine.

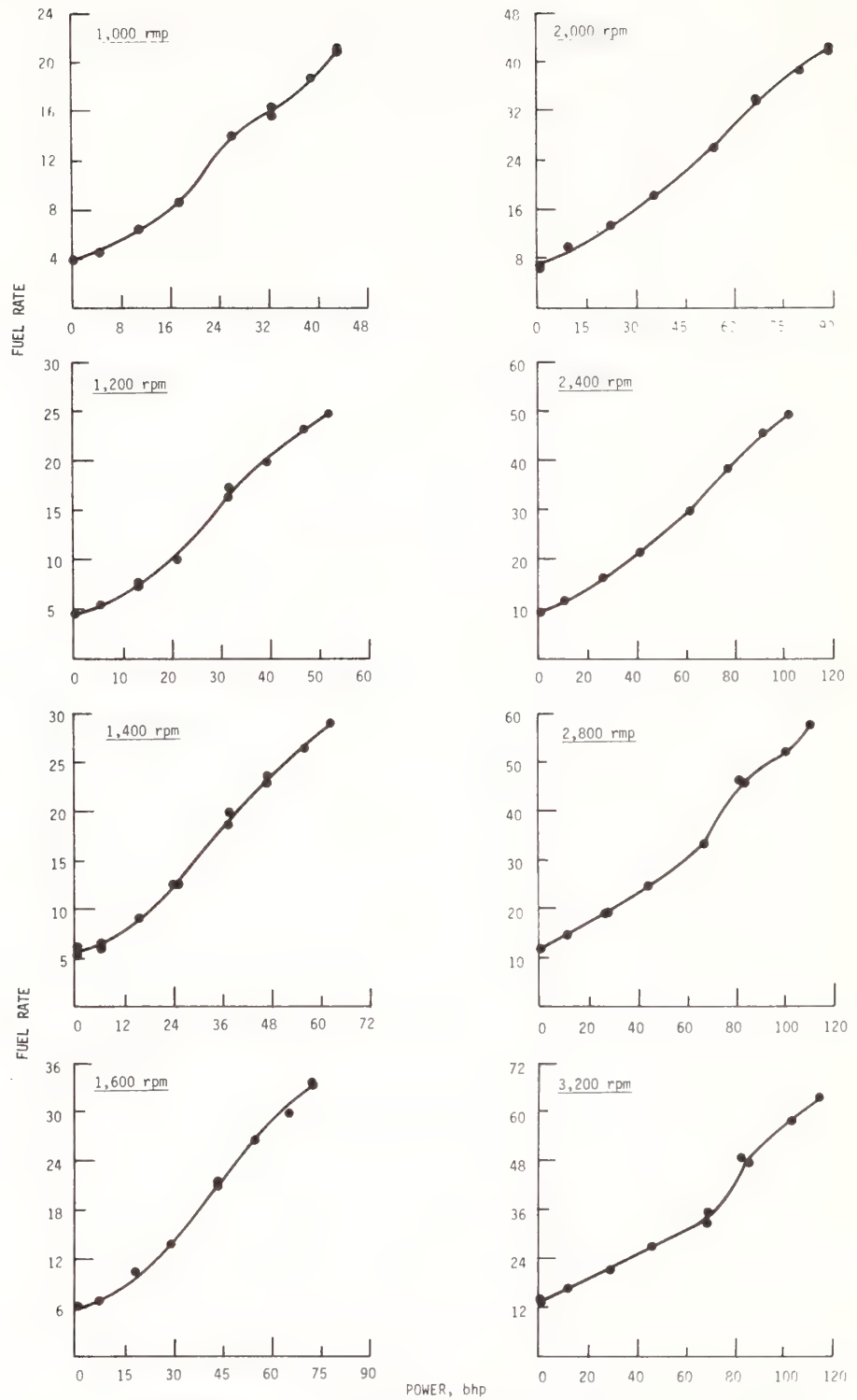


FIGURE 2. Fuel Rate Versus Power at Various Speed and Load Conditions--Ford 300 CID Truck Engine.

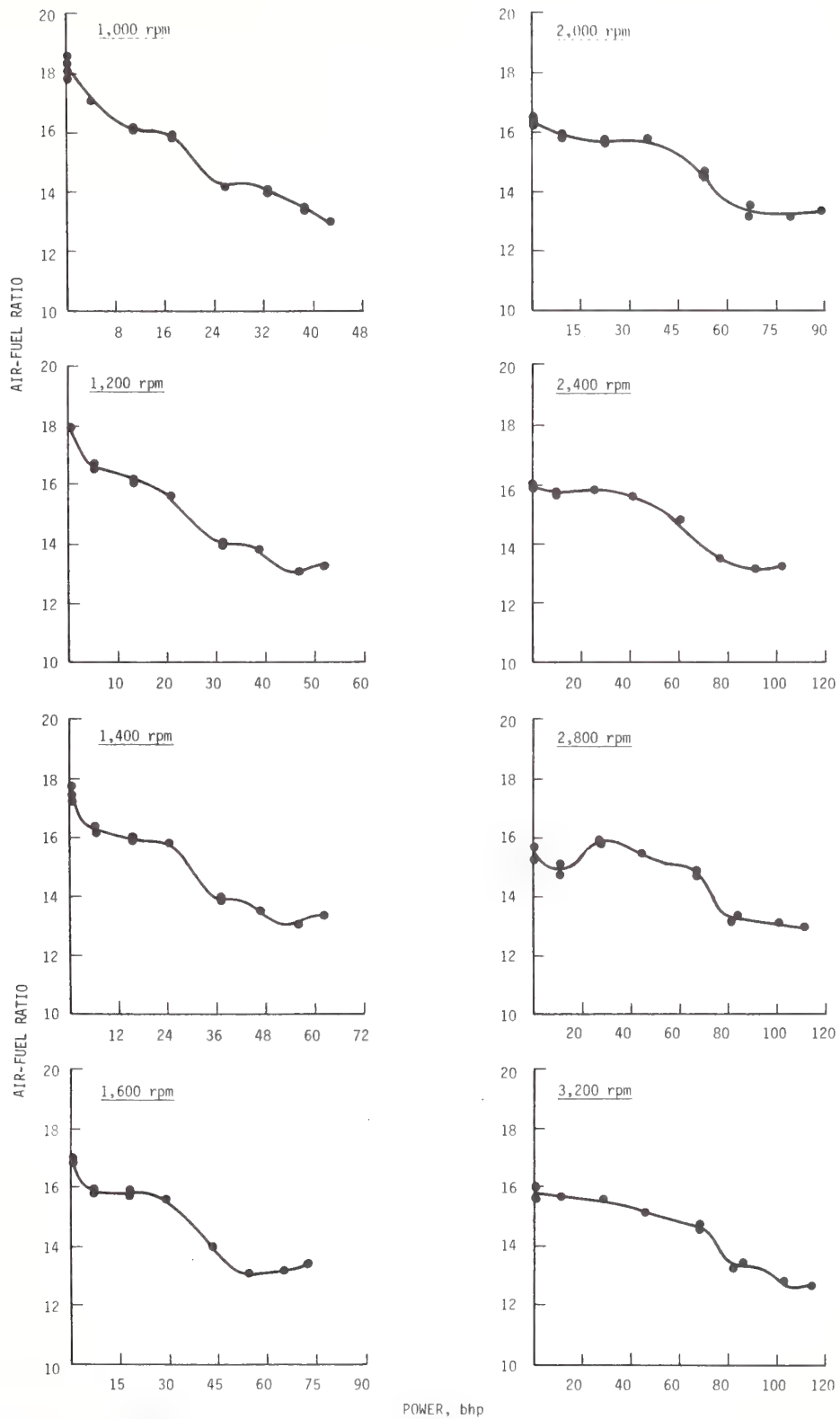


FIGURE 3. Air-Fuel Ratio Versus Power at Various Speed and Load Conditions-- Ford 300 CID Truck Engine.

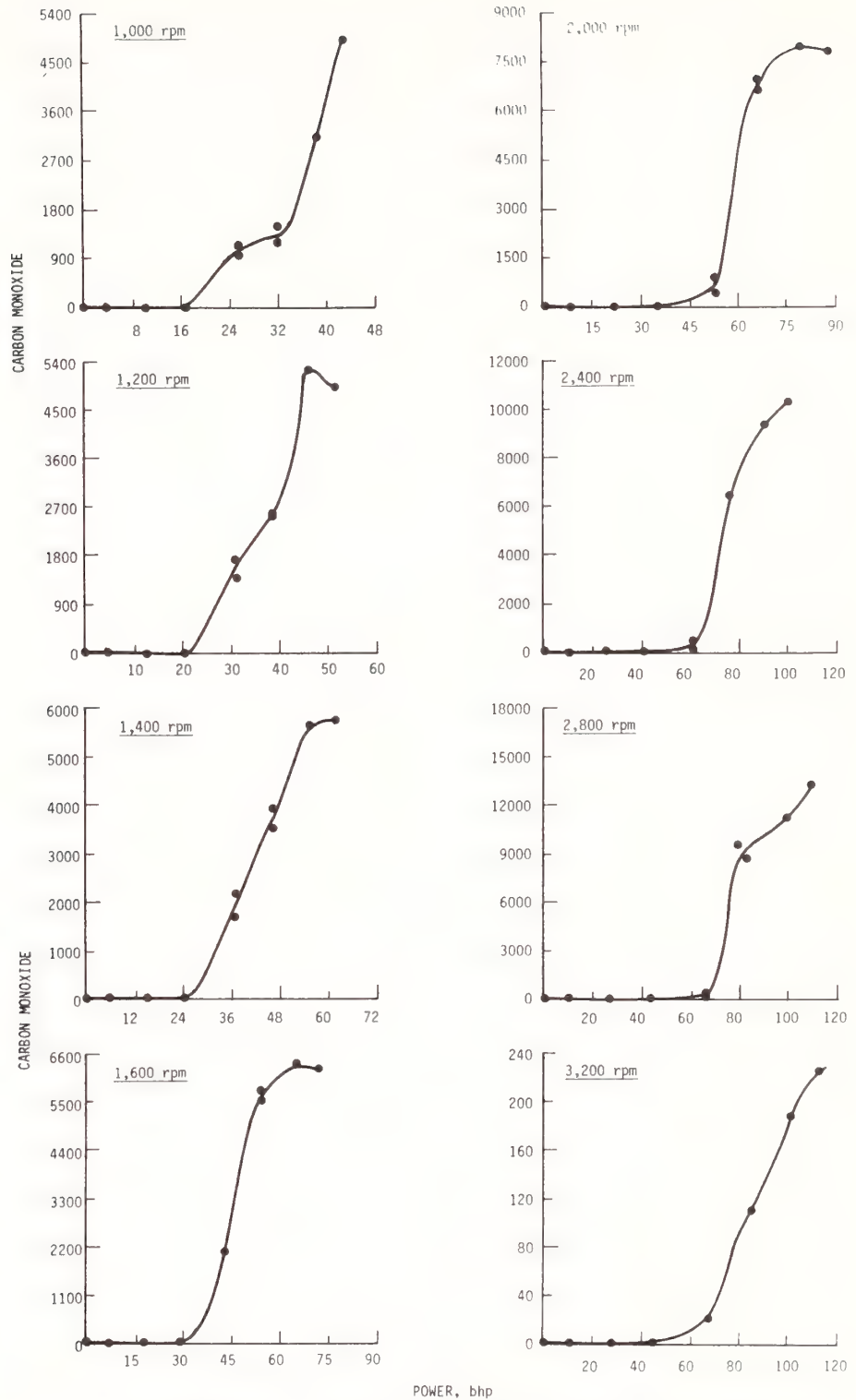


FIGURE 4. Carbon Monoxide Emissions Versus Power at Various Speed and Load Conditions--Ford 300 CID Truck Engine.

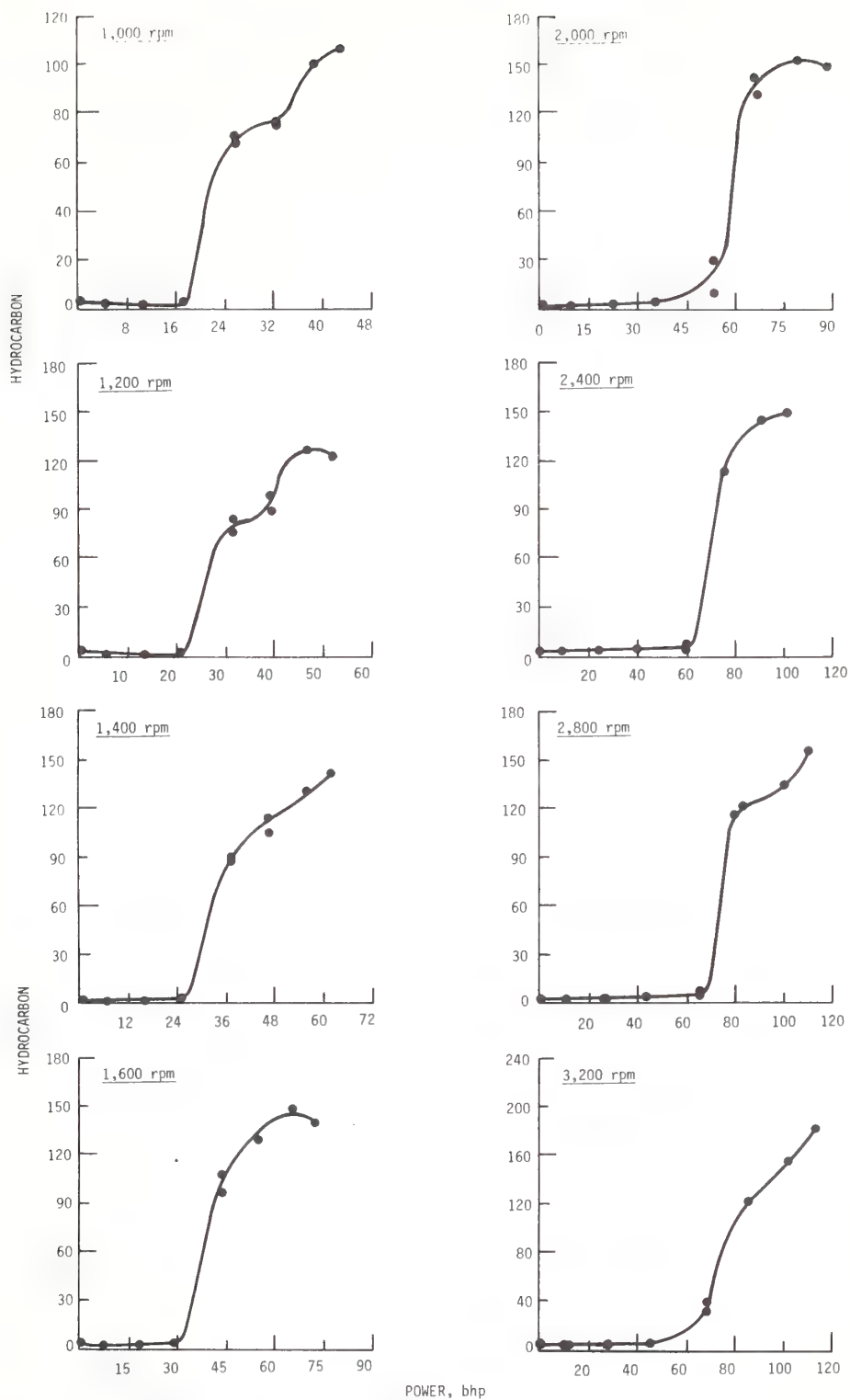


FIGURE 5. Hydrocarbon Emissions Versus Power at Various Speed and Load Conditions--Ford 300 CID Truck Engine.

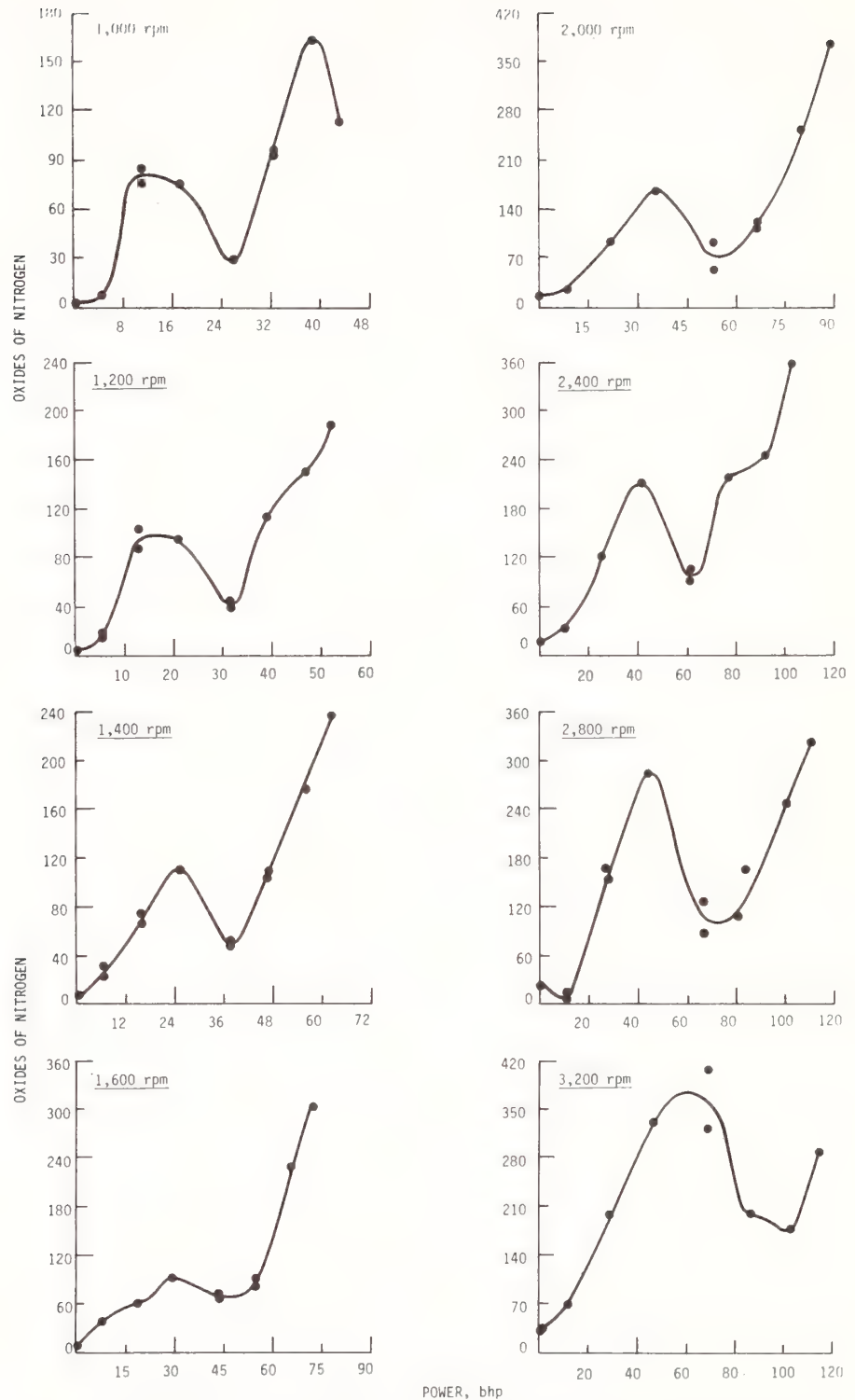


FIGURE 6. Oxides of Nitrogen Emissions Versus Power at Various Speed and Load Conditions--Ford 300 CID Truck Engine.

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	1.01	1.02	2.01	2.02	3.01	3.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE						
TEST DATE	7/10/78	7/10/78	7/10/78	7/10/78	7/10/78	7/10/78
BAROMETER, MMHG	744.0	744.0	744.0	744.0	744.0	744.0
HUMIDITY, GRAINS/LB	82	82	82	82	82	82
TEMPERATURE, F	80	80	79	79	80	80
ENGINE SPEED, RPM	800	800	800	800	800	800
TORQUE, FT-LB	1.2	1.2	10.0	10.0	15.0	15.0
POWER, BHP*	2	2	1.5	1.5	2.3	2.3
FUEL RATE, LB/HR	3.3	3.3	3.5	3.5	3.5	3.6
IGNITION TIMING, DEG BTDC	24.0	24.0	24.0	24.0	25.0	25.0
MANIFOLD VACUUM, IN HG	18.5	18.5	18.0	18.0	17.0	17.0
THROTTLE ANGLE, DEG	0	0	6	6	1.0	1.0
INTAKE MAN. TEMP., F	156	156	142	142	142	142
CONCENTRATIONS, DRY BASIS						
CO, %	5192	0006	2926	0006	2599	0006
CO2, %	12.52	13.54	13.27	13.91	13.47	13.94
O2, %	3.06	1.76	2.11	1.37	1.91	1.42
HC, PPMC	5965	349	3265	306	3007	307
NOX, PPM	28	40	54	54	64	63
AIR/FUEL RATIO	16.12	16.05	15.81	15.74	15.71	15.78
EMISSION RATES, G/HR						
CO	113.8	1	67.2	1	59.0	1
HC	65.7	3.8	37.7	3.5	34.3	3.6
NOX+	1.0	1.5	2.1	2.1	2.5	2.5
OIL TEMPERATURE, F	162	162	166	166	168	168
OIL PRESSURE, PSI	30	30	26	26	25	25
COOLANT TEMPERATURE, F	188	188	188	188	189	189
EXHAUST PRESSURE, IN. H2O	2.0	2.0	2.0	2.0	2.0	2.0
EXHAUST TEMPERATURE, F	634	629	603	581	598	550

* * CORRECTED SAE J816B
+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

4.01	4.02	5.01	5.02	6.01	6.02
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80	80	79	79	80	80
550	550	1000	1000	1000	1000
35.0	35.0	227.0	227.0	204.3	204.3
3.7	3.7	43.2	43.2	38.9	38.9
3.1	3.1	21.3	21.0	18.9	18.8
24.0	24.0	10.0	10.0	11.0	11.0
15.5	15.5	.1	.1	.5	.5
.0	.0	80.0	80.0	28.0	28.0
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1.82	.88	.17	.05	.21	.07
3689	303	2232	1871	2097	1910
76	62	693	587	1021	922
15.26	15.38	13.00	12.89	13.56	13.43
177.2	2	4039.9	4959.4	3054.5	3197.5
36.3	3.0	128.8	106.5	111.1	100.1
2.5	2.1	135.6	113.3	183.3	163.8
171	171	178	178	184	184
16	16	30	30	29	29
188	188	196	196	181	181
1.0	.0	20.0	17.0	22.0	16.0
522	555	1090	962	1115	997

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	7.01	7.02	8.01	8.02	9.01	9.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE						
TEST DATE	7/10/78	7/10/78	7/10/78	7/10/78	7/10/78	7/10/78
SAROMETER, MMHG	744.0	744.0	744.0	744.0	744.0	744.0
HUMIDITY, GRAINS/LB	82	82	82	82	82	82
TEMPERATURE, F	82	82	79	79	80	80
ENGINE SPEED, RPM	1000	1000	1000	1000	1000	1000
TORQUE, FT-LB	170.3	170.3	136.2	136.2	91.0	91.0
POWER, SHP*	32.4	32.4	25.9	25.9	17.3	17.3
FUEL RATE, LB/HR	15.6	15.6	14.2	14.2	8.6	8.5
IGNITION TIMING, DEG BTDC	10.0	10.0	10.0	10.0	33.0	33.0
MANIFOLD VACUUM, IN HG	7	7	1.5	1.5	9.0	9.0
THROTTLE ANGLE, DEG	22.5	22.5	20.0	20.0	10.0	10.0
INTAKE MAN. TEMP., F	140	140	195	195	192	192
CONCENTRATIONS, DRY BASIS						
CO, %	1.7251	1.7090	1.3694	1.4260	.0632	.0011
CO2, %	13.79	13.82	13.99	13.98	13.63	13.82
O2, %	.22	.06	.22	.04	1.79	1.59
HC, PPMC	2044	1688	2299	1688	1924	112
NOX, PPM	657	626	261	205	689	794
AIR/FUEL RATIO	14.04	13.98	14.15	14.07	15.86	15.96
EMISSION RATES, G/HR						
CO	1550.3	1538.5	1125.6	1177.9	35.4	.6
HC	92.3	76.3	94.9	70.0	54.2	3.1
NOX+	100.5	95.9	36.5	28.8	65.7	75.2
OIL TEMPERATURE, F	186	186	159	159	175	175
OIL PRESSURE, PSI	28	28	35	35	31	31
COOLANT TEMPERATURE, F	179	179	191	191	186	186
EXHAUST PRESSURE, IN. H2O	16.0	9.0	14.0	5.0	9.0	3.0
EXHAUST TEMPERATURE, F	1088	969	1030	924	921	832

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER 1

DATA SOURCE CODE 2

TEST DATE 7/10/78

BAROMETER, MMHG 744.0

HUMIDITY, GRAINS/LB 82

TEMPERATURE, F 82

ENGINE SPEED, RPM 1000

TORQUE, FT-LB 57.0

POWER, BHP* 10.8

FUEL RATE, LB/HR 6.3

IGNITION TIMING, DEG BTDC 40.0

MANIFOLD VACUUM, IN HG 14.5

THROTTLE ANGLE, DEG 6.0

INTAKE MAN. TEMP., F 147

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX*

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B
+ CORRECTED FOR HUMIDITY

10.01	10.02	11.01	11.02	12.01	12.02
1	2	1	2	1	2
7/10/78	7/10/78	7/10/78	7/10/78	7/10/78	7/10/78
744.0	744.0	744.0	744.0	744.0	744.0
82	82	82	82	82	82
82	82	82	82	82	82
1000	1000	1000	1000	1000	1000
57.0	57.0	22.7	22.7	1.4	1.4
10.8	10.8	4.3	4.3	3	3
6.3	6.3	4.5	4.5	3.9	3.9
40.0	40.0	40.0	40.0	35.0	35.0
14.5	14.5	17.0	17.0	18.5	18.5
6.0	6.0	3.0	3.0	2.0	2.0
147	147	135	135	130	130
.0679	.0009	.1232	.0007	.1895	.0006
13.46	13.71	12.32	12.93	11.10	12.02
2.02	1.74	3.60	2.99	5.06	4.06
2060	87	3178	161	8082	247
1210	1188	172	160	6	65
16.05	16.09	17.15	17.07	17.82	18.09
28.0	.4	39.1	.2	55.5	.2
42.6	1.8	50.6	2.5	118.8	3.6
84.9	84.2	9.3	8.5	3	3.3
178	178	180	180	179	179
30	30	30	30	30	30
186	186	187	187	188	188
6.0	1.0	4.0	.0	3.0	.0
806	723	740	669	688	704

ENGINE: 1978 FORD 300-C10

FUEL CODE: 7712

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J8168

+ CORRECTED FOR HUMIDITY

13.01	13.02	14.01	14.02	15.01	15.02
1	2	1	2	1	2
7/11/78	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78
744.0	744.0	744.0	744.0	744.0	744.0
85	85	85	85	85	85
70	70	78	78	78	78
1200	1200	1200	1200	1200	1200
228.0	228.0	205.0	205.0	171.0	171.0
52.0	52.0	46.8	46.8	39.0	39.0
24.9	24.9	23.3	23.4	19.8	19.9
10.0	10.0	10.0	10.0	10.0	10.0
1	1	5	5	7	7
80.0	80.0	33.0	33.0	27.0	27.0
133	133	154	154	147	147
3.5001	3.5475	3.9234	4.1022	2.1866	2.2278
12.47	12.45	12.26	12.17	13.34	13.37
.18	.07	.17	.05	.19	.05
2124	1774	2408	1973	2014	1731
850	781	804	675	594	576
13.27	13.21	13.07	12.96	13.82	13.74
4872.2	4941.4	5031.3	5272.3	2492.7	2539.8
148.5	124.1	155.1	127.3	115.3	99.1
204.9	188.3	178.5	150.3	117.2	113.6
176	176	212	212	203	203
36	36	28	28	28	28
181	181	176	176	195	195
32.0	28.0	30.0	18.0	26.0	15.0
1228	1097	1184	1059	1185	1066

ENGINE: 1978 FORD 300-CID
 FUEL CODE: 7718
 TEST NUMBER
 DATA SOURCE CODE
 TEST DATE
 BAROMETER, MMHG
 HUMIDITY, GRAINS/LB
 TEMPERATURE, F
 ENGINE SPEED, RPM
 TORQUE, FT-LB
 POWER, BHP*
 FUEL RATE, LB/HR
 IGNITION TIMING, DEG BTDC
 MANIFOLD VACUUM, IN HG
 THROTTLE ANGLE, DEG
 INTAKE MAN. TEMP., F
 CONCENTRATIONS, DRY BASIS
 CO, %
 CO2, %
 O2, %
 HC, PPM
 NOX, PPM
 AIR/FUEL RATIO
 EMISSION RATES, G/HR
 CO
 HC
 NOX+
 OIL TEMPERATURE, F
 OIL PRESSURE, PSI
 COOLANT TEMPERATURE, F
 EXHAUST PRESSURE, IN. H2O
 EXHAUST TEMPERATURE, F
 * CORRECTED SAE J816B
 + CORRECTED FOR HUMIDITY

16.01	16.02	17.01	17.02	18.01	18.02
1	2	1	2	1	2
7/11/78	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78
743.9	743.9	743.9	743.9	743.9	743.9
77	77	77	77	77	77
78	78	78	78	79	79
1200	1200	1200	1200	1200	1200
137.0	137.0	91.2	91.2	57.0	57.0
31.3	31.3	20.8	20.8	13.0	13.0
16.5	16.5	10.0	10.1	7.3	7.3
11.0	11.0	33.0	33.0	40.0	40.0
1.5	1.5	9.5	9.5	14.5	14.5
23.0	23.0	12.0	12.0	7.2	7.2
217	217	207	207	157	157
1.4673	1.4751	.0860	.0008	.0694	.0007
14.02	14.26	14.17	14.39	13.78	13.89
.20	.03	1.38	1.18	2.10	1.95
2168	1800	1891	88	1898	80
284	256	880	905	1150	1124
14.12	14.05	15.55	15.64	16.09	16.22
1394.7	1383.6	54.0	5	32.4	.4
103.5	84.8	59.6	2.8	44.5	1.9
44.8	40.0	91.8	95.3	89.2	88.1
192	192	196	196	190	190
30	30	30	30	30	30
193	193	180	180	190	190
20.0	8.0	10.0	5.0	6.0	3.0
1167	1066	988	917	875	777

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	19.01	19.02	20.01	20.02	21.01	21.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78
TEST DATE	743.9	743.9	743.9	743.9	744.0	744.0
SAROMETER, MMHG	77	77	77	77	85	85
HUMIDITY, GRAINS/LB	80	80	80	80	72	72
TEMPERATURE, F	1200	1200	1200	1200	1400	1400
ENGINE SPEED, RPM	22.8	22.8	1.8	1.8	234.0	234.0
TORQUE, FT-LB	5.2	5.2	4	4	62.3	62.3
POWER, BHP*	5.3	5.3	4.7	4.6	28.9	29.1
FUEL RATE, LB/HR	40.0	40.0	39.0	39.0	14.0	14.0
IGNITION TIMING, DEG BTDC	17.6	17.6	18.5	18.5	1	1
MANIFOLD VACUUM, IN HG	4.5	4.5	3.2	3.2	80.0	80.0
THROTTLE ANGLE, DEG	129	129	128	128	124	124
INTAKE MAN. TEMP., F	1386	1386	2034	2006	3.3940	3.5045
CONCENTRATIONS, DRY BASIS	13.08	13.52	10.94	12.39	12.47	12.44
CO, %	2.80	2.39	5.77	3.98	.20	.07
CO2, %	3283	108	10655	214	2112	1708
O2, %	298	260	6	89	943	837
HC, PPMC	16.43	16.54	18.04	17.94	13.33	13.23
NOX, PPM	48.6	2	70.7	2	5516.5	5716.3
AIR/FUEL RATIO	57.8	1.9	186.0	3.6	172.4	139.9
EMISSION RATES, G/HR	17.3	15.2	.4	5.0	265.3	236.3
CO	187	187	186	186	189	189
HC	35	35	35	35	36	36
NOX+	188	188	189	189	188	188
OIL TEMPERATURE, F	5.0	1.0	4.0	1.0	49.0	31.0
OIL PRESSURE, PSI	809	718	736	786	1257	1148
COOLANT TEMPERATURE, F						
EXHAUST PRESSURE, IN. H2O						
EXHAUST TEMPERATURE, F						

* CORRECTED SAE J8168
+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

22.01	22.02	23.01	23.02	24.01	24.02
1	2	1	2	1	2
7/11/78	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78
743.9	743.9	743.9	743.9	743.9	743.9
77	77	77	77	77	77
80	80	81	81	81	81
1400	1400	1400	1400	1400	1400
210.6	210.6	175.5	175.5	140.4	140.4
56.1	56.1	46.7	46.7	37.4	37.4
26.5	26.3	22.9	22.8	18.4	18.5
13.0	13.0	13.0	13.0	14.0	14.0
5	5	1.5	1.5	2.5	2.5
35.0	35.0	29.0	29.0	24.5	24.5
120	120	147	147	199	199
4.0161	3.9659	2.8809	2.8271	1.8214	1.5963
12.45	12.63	13.33	13.40	13.94	14.05
.17	.05	.17	.04	.20	.03
2326	1828	2031	1808	2178	1644
758	743	460	489	251	274
13.07	13.08	13.55	13.52	13.97	14.01
5752.1	5617.9	3635.3	3551.3	1889.6	1684.6
167.3	130.0	128.7	114.1	113.5	87.1
180.4	174.9	96.5	102.0	43.3	48.0
194	194	197	197	198	198
38	38	35	35	35	35
184	184	191	191	192	192
39.0	24.0	30.0	20.0	24.0	14.0
1223	1114	1208	1098	1183	1074

ENGINE: 1978 FORD 300-C10

FUEL CODE: 7718	25.01	25.02	26.01	26.02	27.01	27.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78
TEST DATE	743.9	743.9	743.9	743.9	743.9	743.9
BAROMETER, MMHG	77	77	77	77	77	77
HUMIDITY, GRAINS/LB	81	81	80	80	81	81
TEMPERATURE, F	1400	1400	1400	1400	1400	1400
ENGINE SPEED, RPM	93.6	93.6	58.5	58.5	23.4	23.4
TORQUE, FT-LB	24.9	24.9	15.6	15.6	6.2	6.2
POWER, BHP*	12.4	12.4	8.9	8.9	5.8	5.9
FUEL RATE, LB/HR	36.0	36.0	43.0	43.0	43.0	43.0
IGNITION TIMING, DEG BTDC	9.0	9.0	13.5	13.5	18.0	18.0
MANIFOLD VACUUM, IN HG	15.0	15.0	9.5	9.5	6.0	6.0
THROTTLE ANGLE, DEG	225	225	178	178	145	145
INTAKE MAN. TEMP., F						
CONCENTRATIONS, DRY BASIS						
CO, %	.0640	.0008	.0801	.0007	.1505	.0006
CO2, %	13.88	14.11	13.67	13.97	13.29	13.80
O2, %	1.64	1.39	2.10	1.72	2.64	1.92
HC, PPMC	1700	82	1993	81	2871	98
NOX, PPM	855	839	758	683	355	354
AIR/FUEL RATIO	15.77	15.80	16.07	16.04	16.33	16.18
EMISSION RATES, G/HR						
CO	50.6	7	46.2	.4	57.4	.2
HC	67.5	3.3	57.8	2.4	55.0	1.9
NOX+	112.4	110.7	72.7	65.4	22.5	22.5
OIL TEMPERATURE, F	197	197	194	194	192	192
OIL PRESSURE, PSI	35	35	36	36	38	38
COOLANT TEMPERATURE, F	183	183	192	192	189	189
EXHAUST PRESSURE, IN. H2O	14.0	7.0	9.0	3.0	5.0	2.0
EXHAUST TEMPERATURE, F	1047	971	941	848	869	764

* CORRECTED SAE J816B
+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J8168
+ CORRECTED FOR HUMIDITY

28.01	28.02	29.01	29.02	30.01	30.02
1	2	1	2	1	2
7/11/78	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78
743.9	743.9	744.0	744.0	742.6	742.6
77	77	85	85	77	77
81	81	73	73	80	80
1400	1400	1600	1600	1600	1600
1.9	1.9	237.0	237.0	213.3	213.3
5	5	72.1	72.1	65.2	65.2
5.1	5.9	33.8	33.4	29.9	30.1
44.0	44.0	16.0	16.0	15.0	15.0
19.0	19.0	.1	.1	.5	.5
4.5	4.5	80.0	80.0	36.5	36.5
133	133	140	140	124	124
2079	2006	3.2730	3.3469	3.8821	3.8681
11.08	12.58	12.64	12.74	12.55	12.58
5.16	3.81	.21	.08	.18	.07
11361	185	1978	1517	2154	1820
8	102	1022	940	859	838
17.42	17.76	13.40	13.34	13.15	13.11
77.6	3	6208.4	6224.0	6303.9	6332.6
213.0	3.9	188.4	141.7	175.6	149.6
5	7.1	335.5	302.7	231.9	228.2
190	190	201	201	177	177
38	38	40	40	42	42
188	188	189	189	195	195
4.0	2.0	54.0	38.0	34.0	33.0
799	764	1296	1189	1239	1043

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	31.01	31.02	32.01	32.02	33.01	33.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE						
TEST DATE	7/11/78	7/11/78	7/11/78	7/11/78	7/12/78	7/12/78
BAROMETER, MMHG	742.6	742.6	742.6	742.6	742.0	742.0
HUMIDITY, GRAINS/LB	77	77	77	77	64	64
TEMPERATURE, F	81	81	81	81	76	76
ENGINE SPEED, RPM	1600	1600	1600	1600	1600	1600
TORQUE, FT-LB	178.0	178.0	142.0	142.0	94.8	94.8
POWER, BHP*	54.4	54.4	43.4	43.4	28.8	28.8
FUEL RATE, LB/HR	26.6	26.6	21.1	21.0	13.9	13.9
IGNITION TIMING, DEG BTDC	15.0	15.0	19.0	19.0	37.0	37.0
MANIFOLD VACUUM, IN HG	9	9	3.5	3.5	9.5	9.5
THROTTLE ANGLE, DEG	31.5	31.5	26.5	26.5	16.0	16.0
INTAKE MAN. TEMP., F	152	152	212	212	229	229
CONCENTRATIONS, DRY BASIS						
CO, %	3.8860	3.7930	1.7444	1.7068	.0714	.0006
CO2, %	12.50	12.60	13.87	13.95	13.82	14.24
O2, %	.16	.04	.21	.04	1.42	1.08
HC, PPMC	2176	1802	2075	1795	1873	99
NOX, PPM	345	372	338	338	670	656
AIR/FUEL RATIO	13.11	13.11	14.02	13.96	15.59	15.57
EMISSION RATES, G/HR						
CO	5621.3	5498.0	2104.0	2045.1	63.9	.6
HC	158.1	131.2	125.7	108.0	84.1	4.4
NOX+	83.1	89.7	67.7	67.3	93.9	90.8
OIL TEMPERATURE, F	193	193	200	200	173	173
OIL PRESSURE, PSI	40	40	38	38	44	44
COOLANT TEMPERATURE, F	186	186	184	184	190	190
EXHAUST PRESSURE, IN. H2O	35.0	23.0	27.0	17.0	15.0	6.0
EXHAUST TEMPERATURE, F	1215	1115	1198	1095	1051	940

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO₂, %

O₂, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H₂O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

34.01	34.02	35.01	35.02	36.01	36.02
1	2	1	2	1	2
7/12/78	7/12/78	7/12/78	7/12/78	7/12/78	7/12/78
742.0	742.0	742.0	742.0	742.0	742.0
64	64	64	64	64	64
77	77	79	79	78	78
1600	1600	1600	1600	1600	1600
59.3	59.3	23.7	23.7	1.9	1.9
18.0	18.0	7.2	7.2	6	6
10.7	10.6	7.0	7.0	5.8	5.8
46.0	46.0	46.0	46.0	47.0	47.0
13.0	13.0	18.0	18.0	20.0	20.0
11.5	11.5	6.5	6.5	5.0	5.0
209	209	164	164	137	137
.0932	.0006	.1668	.0006	.2190	.0007
13.92	14.11	13.61	13.83	11.71	12.97
1.46	1.15	1.69	1.47	4.35	2.66
2022	97	1906	94	9712	172
601	561	590	522	106	149
15.59	15.62	15.74	15.86	16.90	16.81
63.1	4	75.0	3	88.7	3
68.8	3.3	43.1	2.1	197.5	3.5
63.8	59.7	41.6	37.2	6.7	9.5
186	186	190	190	190	190
42	42	42	42	40	40
189	189	190	190	189	189
10.0	4.0	6.0	1.0	4.0	2.0
985	890	911	827	830	852

ENGINE: 1978 FORD 300-C10

FUEL CODE: 7718	37.01	37.02	38.01	38.02	39.01	39.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE	7/11/78	7/11/78	7/12/78	7/12/78	7/12/78	7/12/78
TEST DATE	744.0	744.0	742.0	742.0	742.0	742.0
BAROMETER, MMHG	85	85	64	64	64	64
HUMIDITY, GRAINS/LB	73	73	78	78	81	81
TEMPERATURE, F	2000	2000	2000	2000	2000	2000
ENGINE SPEED, RPM	234.0	234.0	210.6	210.6	175.5	175.0
TORQUE, FT-LB	89.0	89.0	80.0	80.0	66.7	66.5
POWER, BHP*	42.4	41.9	38.5	38.4	33.9	33.9
FUEL RATE, LB/HR	17.0	17.0	17.0	17.0	17.0	17.0
IGNITION TIMING, DEG BTDC	1	1	1.0	1.0	1.5	1.5
MANIFOLD VACUUM, IN HG	80.0	80.0	43.0	43.0	37.0	37.0
THROTTLE ANGLE, DEG	131	131	130	130	165	165
INTAKE MAN. TEMP., F						
CONCENTRATIONS, DRY BASIS						
CO, %	3.2662	3.3674	3.6610	3.7563	3.7014	3.7231
CO2, %	12.80	12.83	12.56	12.53	12.53	12.54
O2, %	.20	.07	.14	.03	.12	.01
HC, PPMC	1820	1269	1952	1435	2001	1514
NOX, PPM	1049	928	830	754	419	382
AIR/FUEL RATIO	13.43	13.36	13.21	13.15	13.17	13.14
EMISSION RATES, G/HR						
CO	7705.5	7804.4	7747.3	7920.9	6904.4	6937.1
HC	215.7	147.8	207.5	152.0	187.4	141.7
NOX+	428.5	372.5	275.3	249.1	122.5	111.6
OIL TEMPERATURE, F	201	201	203	203	214	214
OIL PRESSURE, PSI	42	42	40	40	40	40
COOLANT TEMPERATURE, F	190	190	193	193	196	196
EXHAUST PRESSURE, IN. H2O	82.0	64.0	68.0	50.0	55.0	42.0
EXHAUST TEMPERATURE, F	1349	1268	1328	1223	1309	1210

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	40.01	41.01	41.02	42.01	42.02
TEST NUMBER	1	1	2	1	2
DATA SOURCE CODE					
TEST DATE	7/12/78	7/12/78	7/12/78	7/12/78	7/12/78
BAROMETER, MMHG	742.0	742.0	742.0	742.0	742.0
HUMIDITY, GRAINS/LB	64	64	64	64	64
TEMPERATURE, F	82	81	81	80	80
ENGINE SPEED, RPM	2000	2000	2000	2000	2000
TORQUE, FT-LB	140.6	93.6	93.6	58.5	58.5
POWER, BHP*	53.4	35.5	35.5	22.2	22.2
FUEL RATE, LB/HR	25.9	18.1	18.2	13.5	13.6
IGNITION TIMING, DEG BTDC	22.0	40.0	40.0	47.0	47.0
MANIFOLD VACUUM, IN HG	3.5	9.5	9.5	13.5	13.5
THROTTLE ANGLE, DEG	30.0	20.5	20.5	15.0	15.0
INTAKE MAN. TEMP., F	217	248	248	232	232
CONCENTRATIONS, DRY BASIS					
CO, %	6615	834	8010	1008	1007
CO2, %	14.23	13.76	13.92	13.79	13.99
O2, %	.35	1.63	1.40	1.48	1.35
HC, PPMC	1694	1357	73	1551	78
NOX, PPM	701	886	889	696	670
AIR/FUEL RATIO	14.61	15.81	15.82	15.66	15.77
EMISSION RATES, G/HR					
CO	1026.7	97.5	1.2	87.7	.6
HC	132.0	79.7	4.3	67.8	3.4
NOX+	170.6	162.3	164.4	94.9	92.1
OIL TEMPERATURE, F	215	213	213	211	211
OIL PRESSURE, PSI	40	40	40	40	40
COOLANT TEMPERATURE, F	183	188	188	190	190
EXHAUST PRESSURE, IN. H2O	41.0	25.0	16.0	15.0	9.0
EXHAUST TEMPERATURE, F	1297	1157	1067	1089	998

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO₂, %

O₂, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H₂O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J8168

+ CORRECTED FOR HUMIDITY

43.01	43.02	44.01	44.02	45.01	45.02
1	2	1	2	1	2
7/12/78	7/12/78	7/12/78	7/12/78	7/11/78	7/11/78
742.0	742.0	742.0	742.0	744.0	744.0
64	64	64	64	85	85
80	80	80	80	76	76
2000	2000	2000	2000	2400	2400
23.4	23.4	1.7	1.7	223.0	223.0
8.9	8.9	6	6	101.7	101.7
9.7	9.7	6.6	6.6	49.3	49.2
47.0	47.0	47.0	47.0	17.0	17.0
16.5	16.5	19.6	19.6	1	1
10.0	10.0	17.0	17.0	80.0	80.0
204	204	166	166	139	139
1671	0006	2348	0007	3.5813	3.7710
13.49	13.81	12.54	13.50	12.70	12.55
1.79	1.58	3.28	1.97	16	06
1919	82	5629	108	1687	1108
225	241	178	222	977	765
15.81	15.93	16.49	16.24	13.30	13.19
105.2	4	104.8	3	9694.6	10208.0
60.7	2.6	126.2	2.4	229.4	150.7
22.2	24.0	12.4	15.4	457.7	358.5
207	207	203	203	209	209
40	40	42	42	42	42
189	189	189	189	194	194
10.0	5.0	7.0	3.0	115.0	89.0
1051	940	958	911	1402	1322

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	46.01	46.02	47.01	47.02	48.01	48.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE						
TEST DATE	7/12/78	7/12/78	7/18/78	7/18/78	7/12/78	7/12/78
BAROMETER, MMHG	742.0	742.0	743.0	743.0	741.0	741.0
HUMIDITY, GRAINS/LB	64	64	89	89	84	84
TEMPERATURE, F	78	78	80	80	81	81
ENGINE SPEED, RPM	2400	2400	2400	2400	2400	2400
TORQUE, FT-LB	200.7	200.7	167.3	167.3	134.0	134.0
POWER, BHP*	91.5	91.5	76.8	76.8	61.6	61.6
FUEL RATE, LB/HR	45.5	45.4	38.3	38.4	29.7	29.8
IGNITION TIMING, DEG BTDC	18.0	18.0	18.0	18.0	28.0	28.0
MANIFOLD VACUUM, IN HG	1.0	1.0	1.4	1.4	5.2	5.2
THROTTLE ANGLE, DEG	49.0	49.0	40.0	40.0	32.0	32.0
INTAKE MAN. TEMP., F	119	119	182	182	223	223
CONCENTRATIONS, DRY BASIS						
CO, %	3.8512	3.7241	2.5515	2.8775	.5951	.2466
CO2, %	12.51	12.60	12.89	12.69	14.34	14.82
O2, %	.11	.02	.06	.03	.40	.04
HC, PPMC	1712	1169	1652	1031	1186	81
NOX, PPM	701	635	680	563	850	350
AIR/FUEL RATIO	13.14	13.18	13.61	13.50	14.72	14.73
EMISSION RATES, G/HR						
CO	9568.2	9280.0	5659.0	6364.8	1060.3	440.4
HC	213.6	146.3	184.0	114.5	106.1	7.3
NOX+	273.1	248.1	266.2	219.8	260.7	107.6
OIL TEMPERATURE, F	208	208	214	214	204	204
OIL PRESSURE, PSI	42	42	40	40	42	42
COOLANT TEMPERATURE, F	194	194	192	192	190	190
EXHAUST PRESSURE, IN. H2O	94.0	70.0	77.0	58.0	55.0	40.0
EXHAUST TEMPERATURE, F	1395	1300	1407	1300	1344	1284

* CORRECTED SAE J816B
+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO₂, %

O₂, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H₂O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

49.01	49.02	50.01	50.02	51.01	51.02
1	2	1	2	1	2
7/12/78	7/12/78	7/12/78	7/12/78	7/12/78	7/12/78
741.0	741.0	741.0	741.0	741.0	741.0
84	84	84	84	84	84
83	83	83	83	83	83
2400	2400	2400	2400	2400	2400
89.0	89.0	55.8	55.8	22.3	22.3
40.9	40.9	25.7	25.7	10.3	10.3
21.4	21.4	15.9	15.9	11.6	11.5
40.0	40.0	47.0	47.0	47.0	47.0
10.0	10.0	13.6	13.6	17.0	17.0
23.0	23.0	17.0	17.0	12.0	12.0
254	254	247	247	225	225
.1225	.0008	.1154	.0006	.1787	.0006
13.98	14.15	13.78	14.01	13.73	14.15
1.31	1.17	1.56	1.36	1.64	1.22
1155	58	1112	58	1684	65
891	903	696	694	240	243
15.57	15.65	15.76	15.78	15.70	15.66
166.3	1.1	118.0	.6	132.8	.4
78.8	4.0	57.1	3.0	62.9	2.4
208.2	211.9	122.5	122.2	30.6	30.8
219	219	219	219	215	215
40	40	40	40	40	40
187	187	191	191	189	189
32.0	22.0	20.0	14.0	11.0	8.0
1216	1127	1152	1060	1132	1011

ENGINE: 1978 FORD 300-C10

FUEL CODE: 7718	52.01	52.02	53.01	53.02	54.01	54.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE						
TEST DATE	7/12/78	7/12/78	7/11/78	7/11/78	7/12/78	7/12/78
BAROMETER, MMHG	741.0	741.0	744.0	744.0	741.0	741.0
HUMIDITY, GRAINS/LB	84	84	85	85	84	84
TEMPERATURE, F	82	82	76	76	83	83
ENGINE SPEED, RPM	2400	2400	2800	2800	2800	2800
TORQUE, FT-LB	1.6	1.6	209.0	209.0	188.0	188.0
POWER, BHP*	.7	.7	111.2	111.2	100.8	100.8
FUEL RATE, LB/HR	9.3	9.3	57.4	56.9	51.7	51.6
IGNITION TIMING, DEG BTDC	48.0	48.0	18.0	18.0	18.0	18.0
MANIFOLD VACUUM, IN HG	18.5	18.5	.1	.1	1.0	1.0
THROTTLE ANGLE, DEG	9.5	9.5	80.0	80.0	55.0	55.0
INTAKE MAN. TEMP., F	207	207	142	142	162	162
CONCENTRATIONS, DRY BASIS						
CO, %	.2327	.0005	4.1963	4.2734	3.9235	3.9240
CO2, %	13.02	13.93	12.19	12.16	12.48	12.40
O2, %	2.47	1.51	.14	.05	.13	.05
HC, PPMC	4742	76	1656	999	1621	948
NOX, PPM	128	147	815	592	590	498
AIR/FUEL RATIO	15.96	15.87	13.02	12.98	13.13	13.13
EMISSION RATES, G/HR						
CO	142.4	.3	13132.8	13282.3	11051.7	11124.8
HC	145.8	2.3	260.4	155.9	229.3	135.0
NOX+	13.5	15.2	441.4	318.5	286.2	242.8
OIL TEMPERATURE, F	212	212	191	191	220	220
OIL PRESSURE, PSI	40	40	44	44	40	40
COOLANT TEMPERATURE, F	189	189	198	198	193	193
EXHAUST PRESSURE, IN. H2O	10.0	5.0	149.0	100.0	134.0	92.0
EXHAUST TEMPERATURE, F	1092	1022	1424	1359	1425	1325

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	55.01	55.02	56.01	56.02	57.01	57.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE						
TEST DATE	7/12/78	7/12/78	7/12/78	7/12/78	7/12/78	7/12/78
BAROMETER, MMHG	741.0	741.0	741.0	741.0	741.0	741.0
HUMIDITY, GRAINS/LB	84	84	84	84	84	84
TEMPERATURE, F	87	87	87	87	87	87
ENGINE SPEED, RPM	2800	2800	2800	2800	2800	2800
TORQUE, FT-LB	156.8	156.8	125.4	125.4	83.6	83.6
POWER, BHP*	84.1	84.1	67.3	67.3	44.8	44.8
FUEL RATE, LB/HR	45.2	45.1	32.9	33.0	24.4	24.4
IGNITION TIMING, DEG BTDC	18.0	18.0	31.0	31.0	43.0	43.0
MANIFOLD VACUUM, IN HG	1.4	1.4	6.5	6.5	10.5	10.5
THROTTLE ANGLE, DEG	46.0	46.0	33.0	33.0	25.0	25.0
INTAKE MAN. TEMP., F	212	212	234	234	252	252
CONCENTRATIONS, DRY BASIS						
CO, %	3.3959	3.4584	.6440	.2103	.1683	.0010
CO2, %	12.70	12.70	14.20	14.73	13.96	14.35
O2, %	.13	.05	.42	.04	1.12	.93
HC, PPMC	1469	965	1254	73	952	50
NOX, PPM	448	380	1093	250	1067	1063
AIR/FUEL RATIO	13.34	13.31	14.72	14.75	15.44	15.48
EMISSION RATES, G/HR						
CO	8535.7	8667.7	1279.4	419.2	260.5	1.5
HC	185.5	121.4	125.1	7.3	74.0	3.8
NOX+	193.8	163.9	373.5	85.8	284.3	280.7
OIL TEMPERATURE, F	233	233	236	236	235	235
OIL PRESSURE, PSI	40	40	40	40	40	40
COOLANT TEMPERATURE, F	192	192	191	191	189	189
EXHAUST PRESSURE, IN. H2O	100.0	78.0	69.0	50.0	41.0	30.0
EXHAUST TEMPERATURE, F	1424	1331	1355	1318	1268	1196

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

58.01	58.02	59.01	59.02	60.01	60.02
1	2	1	2	1	2
7/12/78	7/12/78	7/12/78	7/12/78	7/12/78	7/12/78
741.0	741.0	741.0	741.0	741.0	741.0
84	84	96	84	84	84
84	84	83	83	84	84
2800	2800	2800	2800	2800	2800
52.3	52.3	20.9	20.9	1.6	1.6
28.0	28.0	11.2	11.2	.9	.9
18.9	18.9	14.4	14.4	11.7	11.7
48.0	48.0	49.0	49.0	49.0	49.0
13.5	13.5	16.5	16.5	17.5	17.5
19.5	19.5	15.5	15.5	12.5	12.5
254	254	249	249	256	256
.1303	.0007	.2541	.0251	.2641	.0007
13.75	13.83	13.84	14.85	13.27	14.09
1.64	1.48	1.16	.07	1.98	1.28
867	41	3278	53	7719	69
723	720	227	95	130	171
15.84	15.88	15.16	14.85	15.25	15.70
159.3	.9	229.9	22.0	195.7	.5
53.2	2.6	148.9	2.3	287.2	2.6
152.3	153.0	37.6	14.3	16.5	22.1
231	231	224	224	219	219
40	40	40	40	40	40
193	193	189	189	190	190
28.0	19.0	18.0	10.0	14.0	7.0
1218	1124	1209	1127	1187	1135

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	61.01	61.02	62.01	62.02	63.01	63.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE						
TEST DATE	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78
BAROMETER, MMHG	744.0	744.0	744.0	744.0	744.0	744.0
HUMIDITY, GRAINS/LB	85	85	85	85	85	85
TEMPERATURE, F	78	78	79	79	83	83
ENGINE SPEED, RPM	3200	3200	3200	3200	3200	3200
TORQUE, FT-LB	188.0	188.0	169.0	169.0	141.0	141.0
POWER, BHP*	114.4	114.4	102.8	102.8	85.8	85.8
FUEL RATE, LB/HR	63.0	63.3	57.7	57.0	47.2	47.2
IGNITION TIMING, DEG BTDC	18.0	18.0	18.0	18.0	21.0	21.0
MANIFOLD VACUUM, IN HG	1	1	1.2	1.2	2.0	2.0
THROTTLE ANGLE, DEG	80.0	80.0	60.0	60.0	46.0	46.0
INTAKE MAN. TEMP., F	140	140	160	160	235	235
CONCENTRATIONS, DRY BASIS						
CO, %	4.7861	4.9613	4.4843	4.5477	3.0960	3.0789
CO2, %	11.84	11.75	12.05	12.01	12.87	12.91
O2, %	.02	.04	.11	.03	.13	.04
HC, PPMC	1716	1065	1677	997	1604	914
NOX, PPM	679	486	441	328	536	433
AIR/FUEL RATIO	12.71	12.69	12.88	12.86	13.45	13.46
EMISSION RATES, G/HR						
CO	16206.1	16861.3	14002.3	14054.1	8190.8	8168.6
HC	291.7	181.8	263.0	154.8	213.1	121.8
NOX+	398.1	285.6	238.2	175.4	245.4	198.8
OIL TEMPERATURE, F	214	214	214	214	237	237
OIL PRESSURE, PSI	43	43	40	40	40	40
COOLANT TEMPERATURE, F	192	192	194	194	192	192
EXHAUST PRESSURE, IN. H2O	150.0	100.0	148.0	110.0	125.0	88.0
EXHAUST TEMPERATURE, F	1434	1402	1432	1338	1448	1360

* CORRECTED SAE J6168

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID
 FUEL CODE: 7712
 DATA SOURCE CODE
 TEST DATE
 BAROMETER, MMHG
 HUMIDITY, GRAINS/LB
 TEMPERATURE, F
 ENGINE SPEED, RPM
 TORQUE, FT-LB
 POWER, BHP*
 FUEL RATE, LB/HR
 IGNITION TIMING, DEG BTDC
 MANIFOLD VACUUM, IN HG
 THROTTLE ANGLE, DEG
 INTAKE MAN. TEMP., F
 CONCENTRATIONS, DRY BASIS
 CO, %
 CO2, %
 O2, %
 HC, PPMC
 NOX, PPM
 AIR/FUEL RATIO
 EMISSION RATES, G/HR
 CO
 HC
 NOX+
 OIL TEMPERATURE, F
 OIL PRESSURE, PSI
 COOLANT TEMPERATURE, F
 EXHAUST PRESSURE, IN. H2O
 EXHAUST TEMPERATURE, F
 * CORRECTED SAE J8168
 + CORRECTED FOR HUMIDITY

64.01	64.02	65.01	65.02	66.01	66.02
1	2	1	2	1	2
7/11/78	7/11/78	7/11/78	7/11/78	7/11/78	7/11/78
744.0	744.0	744.0	744.0	744.0	744.0
85	85	85	85	85	85
83	83	83	83	81	81
3200	3200	3200	3200	3200	3200
112.8	112.8	75.2	75.2	47.0	47.0
68.6	68.6	45.7	45.7	28.6	28.6
35.2	35.3	26.5	26.6	21.0	20.9
36.0	36.0	46.0	46.0	49.0	49.0
7.5	7.5	11.0	11.0	13.9	13.9
33.0	33.0	26.0	26.0	21.2	21.2
229	229	243	243	256	256
8517	7195	3090	0016	1543	0010
14.11	14.36	14.02	14.59	13.86	14.11
.37	.08	.87	.52	1.36	1.14
1297	298	1196	51	1288	61
1152	875	1156	1155	838	853
14.59	14.55	15.18	15.19	15.58	15.63
1792.2	1517.3	512.1	2.6	206.9	1.4
137.1	31.5	99.5	4.2	86.7	4.1
419.5	319.4	331.8	329.5	194.6	197.8
243	243	244	244	238	238
40	40	40	40	40	40
192	192	192	192	191	191
76.0	56.0	50.0	36.0	34.0	23.0
1362	1294	1302	1243	1260	1169

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

67.01	67.02	68.01	68.02	69.01	69.02
1	2	1	2	1	2
7/11/78	7/11/78	7/11/78	7/11/78	7/13/78	7/13/78
744.0	744.0	744.0	744.0	743.1	743.1
85	85	85	85	80	80
81	81	81	81	76	76
3200	3200	3200	3200	800	800
18.8	18.8	2.0	2.0	1.2	1.2
11.4	11.4	1.2	1.2	2	2
16.5	16.5	12.9	13.1	3.3	3.3
50.0	50.0	50.0	50.0	24.0	24.0
16.0	16.0	17.5	17.5	18.5	18.5
17.0	17.0	15.0	15.0	0	0
251	251	243	243	180	180
1712	0011	2200	0015	3460	0006
13.51	14.03	12.46	13.93	12.24	13.26
1.87	1.26	3.35	1.28	3.12	2.26
3832	84	9156	104	5743	276
367	380	199	238	31	38
15.64	15.70	16.13	15.71	16.32	16.45
181.9	1.1	189.2	1.3	78.8	1
204.4	4.5	395.5	4.4	65.7	3.1
67.4	69.8	29.7	34.9	1.2	1.4
234	234	228	228	175	175
40	40	40	40	25	25
191	191	191	191	188	188
25.0	15.0	20.0	11.0	2.0	2.0
1237	1178	1194	1241	771	771

ENGINE: 1978 FORD 300-C10

FUEL CODE: 7718	70.01	70.02	71.01	71.02	72.01	72.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
TEST DATE	743.1	743.1	743.1	743.1	743.1	743.1
SAROMETER, MMHG	80	80	80	80	80	80
HUMIDITY, GRAINS/LB	73	73	74	74	73	73
TEMPERATURE, F	800	800	800	800	550	550
ENGINE SPEED, RPM	10.0	10.0	15.0	15.0	35.0	35.0
TORQUE, FT-LB	1.5	1.5	2.3	2.3	3.7	3.7
POWER, BHP*	3.6	3.6	3.7	3.7	3.3	3.2
FUEL RATE, LB/HR	24.0	24.0	24.0	24.0	24.0	24.0
IGNITION TIMING, DEG BTDC	18.0	18.0	17.8	17.8	15.5	15.5
MANIFOLD VACUUM, IN HG	.5	.5	1.0	1.0	.0	.0
THROTTLE ANGLE, DEG	136	136	122	122	125	125
INTAKE MAN. TEMP., F						
CONCENTRATIONS, DRY BASIS						
CO, %	2114	.0006	.1971	.0006	.7171	.0010
CO2, %	13.23	13.84	13.23	13.81	13.28	14.47
O2, %	2.20	1.63	2.19	1.65	1.85	.79
HC, PPMC	3683	260	2828	269	3555	293
NOX, PPM	56	47	66	60	84	62
AIR/FUEL RATIO	15.88	15.94	15.98	15.96	15.38	15.32
EMISSION RATES, G/HR						
CO	49.8	.1	48.3	.1	147.4	.2
HC	43.6	3.1	34.8	3.2	36.7	2.9
NOX+	2.2	1.9	2.7	2.4	2.9	2.1
OIL TEMPERATURE, F	172	172	169	169	165	165
OIL PRESSURE, PSI	26	26	25	25	17	17
COOLANT TEMPERATURE, F	189	189	185	185	190	190
EXHAUST PRESSURE, IN. H2O	2.0	.0	2.0	.0	1.0	.0
EXHAUST TEMPERATURE, F	681	620	617	567	529	532

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-C10

FUEL CODE: 7718	73.01	73.02	74.01	74.02	75.01	75.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
TEST DATE	743.1	743.1	743.1	743.1	743.1	743.1
SAROMETER, MMHG	80	80	80	80	80	80
HUMIDITY, GRAINS/LB	71	71	74	74	75	75
TEMPERATURE, F	1000	1000	1000	1000	1000	1000
ENGINE SPEED, RPM	170.3	170.3	136.2	136.2	57.0	57.0
TORQUE, FT-LB	32.5	32.5	26.0	26.0	10.9	10.9
POWER, BHP*	16.3	16.4	14.0	14.0	6.5	6.5
FUEL RATE, LB/HR	10.0	10.0	10.0	10.0	40.0	40.0
IGNITION TIMING, DEG BTDC	1.0	1.0	1.5	1.5	14.5	14.5
MANIFOLD VACUUM, IN HG	22.5	22.5	20.0	20.0	6.0	6.0
THROTTLE ANGLE, DEG	143	143	180	180	165	165
INTAKE MAN. TEMP., F						
CONCENTRATIONS, DRY BASIS						
CO, %	1.3174	1.3873	1.2235	1.1948	.0617	.0008
CO2, %	14.14	14.16	14.18	14.27	13.51	13.54
O2, %	.19	.01	.17	.01	2.02	1.86
HC, PPMC	1982	1577	2010	1656	1720	81
NOX, PPM	637	588	232	218	1070	1044
AIR/FUEL RATIO	14.20	14.10	14.21	14.16	16.08	16.19
EMISSION RATES, G/HR						
CO	1241.5	1307.5	991.0	969.5	26.4	.3
HC	93.8	74.6	81.8	67.5	37.0	1.8
NOX+	101.4	93.6	31.8	29.9	77.4	76.6
OIL TEMPERATURE, F	167	167	177	177	179	179
OIL PRESSURE, PSI	33	33	30	30	30	30
COOLANT TEMPERATURE, F	196	196	183	183	191	191
EXHAUST PRESSURE, IN. H2O	16.0	7.0	14.0	6.0	6.0	2.0
EXHAUST TEMPERATURE, F	1040	963	1091	969	900	868

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	76.01	76.02	77.01	77.02	78.01	78.02
TEST NUMBER	1	2	1	1	1	2
DATA SOURCE CODE						
TEST DATE	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
BAROMETER, MMHG	743.1	743.1	743.1	743.1	743.1	743.1
HUMIDITY, GRAINS/LB	80	80	80	80	94	94
TEMPERATURE, F	75	75	75	75	75	75
ENGINE SPEED, RPM	1000	1000	1000	1000	1200	1200
TORQUE, FT-LB	22.7	22.7	.9	.9	171.0	171.0
POWER, BHP*	4.3	4.3	.2	.2	39.2	39.2
FUEL RATE, LB/HR	4.5	4.5	3.8	3.8	20.0	19.9
IGNITION TIMING, DEG BTDC	40.0	40.0	40.0	40.0	10.0	10.0
MANIFOLD VACUUM, IN HG	17.0	17.0	18.5	18.5	1.0	1.0
THROTTLE ANGLE, DEG	3.0	3.0	2.0	2.0	26.5	26.5
INTAKE MAN. TEMP., F	135	135	123	123	161	161
CONCENTRATIONS, DRY BASIS						
CO, %	1291	.0006	1887	.0005	2.2641	2.3273
CO2, %	12.11	12.94	11.10	11.78	13.47	13.54
O2, %	3.65	2.99	5.75	4.50	.13	.01
HC, PPMC	4269	163	8178	289	1930	1602
NOX, PPM	139	141	4	43	608	561
AIR/FUEL RATIO	17.08	17.06	18.37	18.52	13.77	13.71
EMISSION RATES, G/HR						
CO	41.4	2	53.8	.1	2567.7	2616.5
HC	68.7	2.6	117.0	4.2	109.9	90.4
NOX+	7.5	7.5	.2	2.1	124.9	114.2
OIL TEMPERATURE, F	179	179	178	178	176	176
OIL PRESSURE, PSI	30	30	30	30	37	37
COOLANT TEMPERATURE, F	186	186	188	188	187	187
EXHAUST PRESSURE, IN. H2O	4.0	1.0	3.0	1.0	25.0	15.0
EXHAUST TEMPERATURE, F	750	682	677	698	1179	1046

* CORRECTED SAE J816B
+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-C10

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

79.01	79.02	80.01	80.02	81.01	81.02
1	2	1	2	1	2
7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
743.1	743.1	743.1	743.1	743.1	743.1
94	94	94	94	94	94
76	76	77	77	78	78
1200	1200	1200	1200	1200	1200
137.0	137.0	57.0	57.0	22.8	22.8
31.4	31.4	13.1	13.1	5.2	5.2
17.4	17.3	7.6	7.7	5.4	5.4
10.0	10.0	40.0	40.0	40.0	40.0
1.5	1.5	14.5	14.5	17.5	17.5
23.0	23.0	8.0	8.0	4.5	4.5
185	185	175	175	134	134
1.7106	1.7397	.0725	.0008	.1319	.0006
13.88	13.93	13.41	13.57	13.05	13.13
.14	.01	2.19	1.84	2.54	2.59
1861	1553	1698	71	1607	86
240	242	867	1113	294	267
14.01	13.94	16.20	16.17	16.45	16.75
1702.2	1720.0	36.6	.4	48.6	.2
93.0	77.1	43.0	1.8	29.7	1.6
43.3	43.3	79.2	103.0	19.6	17.9
186	186	188	188	186	186
35	35	32	32	35	35
182	182	185	185	188	188
21.0	9.0	6.0	3.0	4.0	1.0
1182	1050	905	815	818	721

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPM

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

82.01	82.02	83.01	83.02	84.01	84.02
1	2	1	2	1	2
7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
743.1	743.1	743.1	743.1	743.1	743.1
94	94	94	94	94	94
77	77	77	77	78	78
1200	1200	1400	1400	1400	1400
1.0	1.0	175.5	175.5	140.4	140.4
.2	.2	46.9	46.9	37.5	37.5
4.5	4.5	23.4	23.4	19.7	19.8
40.0	40.0	13.0	13.0	14.0	14.0
18.5	18.5	1.5	1.5	2.5	2.5
3.2	3.2	29.0	29.0	25.5	25.5
124	124	152	152	202	202
.1985	.0006	2.9164	3.0350	2.0989	1.9386
10.82	12.13	13.17	13.19	13.74	13.88
5.81	4.11	.12	.01	.14	.02
10662	230	1946	1621	1868	1581
6	81	479	464	237	255
18.11	18.11	13.50	13.42	13.85	13.87
66.6	.2	3791.8	3911.0	2329.9	2164.9
179.6	3.9	127.1	104.9	104.1	88.7
.4	4.9	112.8	108.3	47.7	51.6
183	183	190	190	194	194
35	35	40	40	36	36
189	189	196	196	179	179
3.0	1.0	30.0	16.0	24.0	13.0
727	769	1200	1080	1192	1075

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

85.01	85.02	86.01	86.02	87.01	87.02
1	2	1	2	1	2
7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
743.1	743.1	743.1	743.1	743.1	743.1
94	94	94	94	94	94
79	79	79	79	79	79
1400	1400	1400	1400	1400	1400
58.5	58.5	23.4	23.4	1.0	1.0
15.6	15.6	6.3	6.3	3	3
8.9	9.0	6.3	6.3	5.2	5.3
43.0	43.0	43.0	43.0	44.0	44.0
13.5	13.5	18.0	18.0	19.0	19.0
9.5	9.5	6.0	6.0	4.2	4.2
201	201	160	160	134	134
.0786	.0008	.1382	.0007	.1981	.0006
13.77	13.96	13.47	13.60	11.54	12.70
1.77	1.55	2.11	1.89	4.79	3.14
1758	79	1994	92	9608	201
679	703	444	409	15	108
15.85	15.92	16.05	16.18	17.29	17.21
45.3	.5	56.7	.3	73.4	.2
50.9	2.3	41.1	1.9	178.8	3.8
70.8	74.1	33.0	31.1	1.0	7.3
195	195	193	193	190	190
36	36	40	40	40	40
188	188	191	191	190	190
9.0	5.0	5.0	2.0	4.0	1.0
975	897	896	804	819	823

ENGINE: 1978 FORD 300-C10

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO₂, %

O₂, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H₂O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

88.01	88.02	89.01	89.02	90.01	90.02
1	2	1	2	1	2
7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
743.5	743.5	743.5	743.5	743.5	743.5
80	80	80	80	80	80
80	80	81	81	81	81
1600	1600	1600	1600	1600	1600
178.0	178.0	142.0	142.0	59.3	59.3
54.3	54.3	43.3	43.3	18.1	18.1
26.9	26.9	21.5	21.6	10.5	10.5
15.0	15.0	19.0	19.0	46.0	46.0
1.0	1.0	3.5	3.5	13.0	13.0
31.0	31.0	26.5	26.5	11.5	11.5
172	172	215	215	228	228
3.9397	3.9422	1.7375	1.7040	.0855	.0009
12.43	12.47	13.79	13.87	13.72	13.93
.15	.04	.19	.04	1.73	1.54
2143	1771	1879	1556	1856	93
349	328	325	339	595	530
13.08	13.05	14.02	13.98	15.81	15.90
5763.6	5762.9	2149.9	2112.5	57.8	.6
157.5	130.0	116.8	96.9	63.0	3.2
86.2	81.0	67.9	71.0	68.0	61.1
180	180	198	198	201	201
42	42	42	42	40	40
186	186	193	193	191	191
35.0	21.0	29.0	18.0	11.0	8.0
1211	1106	1205	1100	1026	940

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	91.01	91.02	92.01	92.02	93.01	93.02
DATA SOURCE CODE	1	2	1	2	1	2
TEST DATE	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
BAROMETER, MMHG	743.5	743.5	743.5	743.5	743.5	743.5
HUMIDITY, GRAINS/LB	80	80	80	80	80	80
TEMPERATURE, F	80	80	80	80	81	81
ENGINE SPEED, RPM	1600	1600	1600	1600	2000	2000
TORQUE, FT-LB	23.7	23.7	1.6	1.6	175.5	175.5
POWER, BHP*	7.2	7.2	.5	.5	66.9	66.9
FUEL RATE, LB/HR	6.9	6.9	5.9	5.9	33.5	33.4
IGNITION TIMING, DEG BTDC	46.0	46.0	47.0	47.0	17.0	17.0
MANIFOLD VACUUM, IN HG	18.0	18.0	19.8	19.8	1.5	1.5
THROTTLE ANGLE, DEG	6.5	6.5	5.0	5.0	36.0	36.0
INTAKE MAN. TEMP., F	166	166	137	137	160	160
CONCENTRATIONS, DRY BASIS						
CO, %	.1593	.0008	.2093	.0007	2.9241	3.6050
CO2, %	13.57	13.93	11.59	13.09	13.06	12.71
O2, %	2.03	1.70	4.55	2.73	.16	.04
HC, PPMC	2122	101	9973	193	1823	1424
NOX, PPM	533	488	52	152	533	387
AIR/FUEL RATIO	15.96	16.02	17.04	16.84	13.53	13.22
EMISSION RATES, G/HR						
CO	71.5	.4	87.5	.3	5472.3	6617.1
HC	47.8	2.3	209.4	4.0	171.4	131.3
NOX+	40.4	37.0	3.7	10.5	168.5	120.0
OIL TEMPERATURE, F	196	196	193	193	201	201
OIL PRESSURE, PSI	40	40	40	40	42	42
COOLANT TEMPERATURE, F	188	188	188	188	184	184
EXHAUST PRESSURE, IN. H2O	6.0	3.0	5.0	2.0	52.0	38.0
EXHAUST TEMPERATURE, F	920	822	844	874	1323	1211

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPM

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

94.01	94.02	95.01	95.02	96.01	96.02
1	2	1	2	1	2
7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
743.5	743.5	743.5	743.5	743.5	743.5
80	80	80	80	80	80
84	84	83	83	81	81
2000	2000	2000	2000	2000	2000
140.4	140.4	58.5	58.5	23.4	23.4
53.5	53.5	22.3	22.3	8.9	8.9
26.0	26.0	13.2	13.4	9.6	9.6
22.0	22.0	47.0	47.0	47.0	47.0
3.5	3.5	13.5	13.5	16.5	16.5
29.0	29.0	14.5	14.5	10.0	10.0
223	223	251	251	204	204
5301	2613	.0975	.0008	.1704	.0007
14.38	14.80	13.73	13.97	13.45	13.75
.44	.04	1.65	1.43	2.01	1.76
1510	122	1458	73	2023	78
716	193	626	632	216	230
14.74	14.72	15.79	15.83	15.95	16.07
827.6	407.5	83.4	.7	107.3	.4
118.4	9.6	62.7	3.2	64.0	2.4
188.8	50.8	90.5	92.1	23.0	24.4
212	212	212	212	206	206
42	42	42	42	42	42
185	185	192	192	189	189
41.0	31.0	16.0	7.0	10.0	4.0
1305	1240	1099	1011	1047	934

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718	97.01	97.02	99.01	99.02	100.01	100.02
TEST NUMBER	1	2	1	2	1	2
DATA SOURCE CODE						
TEST DATE	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
BAROMETER, MMHG	743.5	743.5	743.5	743.5	743.5	743.5
HUMIDITY, GRAINS/LB	80	80	80	80	80	80
TEMPERATURE, F	80	80	84	84	83	83
ENGINE SPEED, RPM	2000	2000	2400	2400	2400	2400
TORQUE, FT-LB	1.5	1.5	134.0	134.0	55.8	55.8
POWER, BHP*	.6	.6	61.3	61.3	25.5	25.5
FUEL RATE, LB/HR	7.3	7.3	29.6	29.5	16.2	16.2
IGNITION TIMING, DEG BTDC	47.0	47.0	28.0	28.0	47.0	47.0
MANIFOLD VACUUM, IN HG	19.5	19.5	5.5	5.5	13.5	13.5
THROTTLE ANGLE, DEG	6.8	6.8	31.0	31.0	17.0	17.0
INTAKE MAN. TEMP., F	168	168	228	228	253	253
CONCENTRATIONS, DRY BASIS						
CO, %	.2338	.0007	.4688	.0506	.1171	.0007
CO2, %	12.46	13.25	14.44	14.98	13.79	14.02
O2, %	3.35	2.39	.47	.08	1.65	1.45
HC, PPMC	7090	134	1264	50	1144	57
NOX, PPM	163	188	975	307	708	694
AIR/FUEL RATIO	16.37	16.57	14.82	14.85	15.82	15.84
EMISSION RATES, G/HR						
CO	114.3	.3	833.5	89.8	122.4	.7
HC	174.0	3.3	112.9	4.4	60.0	3.0
NOX+	13.5	15.8	292.8	92.0	125.0	122.1
OIL TEMPERATURE, F	202	202	222	222	221	221
OIL PRESSURE, PSI	42	42	42	42	42	42
COOLANT TEMPERATURE, F	188	188	189	189	190	190
EXHAUST PRESSURE, IN. H2O	7.0	2.0	55.0	36.0	21.0	14.0
EXHAUST TEMPERATURE, F	963	921	1337	1292	1165	1078

* CORRECTED SAE J8168
+ CORRECTED FOR HUMIDITY

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

101.01	101.02	102.01	102.02	103.01	103.02
1	2	1	2	1	2
7/13/78	7/13/78	7/13/78	7/13/78	7/13/78	7/13/78
743.5	743.5	743.5	743.5	744.0	744.0
80	80	80	80	67	67
82	82	82	82	76	76
2400	2400	2400	2400	2800	2800
22.3	22.3	1.5	1.5	153.0	153.0
10.2	10.2	.7	.7	81.0	81.0
11.6	11.6	9.2	9.3	46.0	45.8
47.0	47.0	48.0	48.0	16.0	16.0
17.0	17.0	19.0	19.0	1.5	1.5
12.0	12.0	9.2	9.2	46.0	46.0
226	226	204	204	206	206
1757	1757	2356	1007	3.7231	3.7212
13.76	13.99	12.90	13.90	12.31	12.34
1.69	1.50	2.77	1.77	.11	.02
1575	59	5237	82	1711	906
240	262	130	157	383	262
15.75	15.87	16.13	16.06	13.15	13.16
130.4	5	144.1	4	9539.4	9531.3
58.7	2.2	160.9	2.5	220.2	116.6
30.1	33.2	13.4	16.0	156.0	106.7
216	216	213	213	241	241
40	40	40	40	40	40
192	192	190	190	193	193
14.0	8.0	10.0	5.0	107.0	82.0
1131	1017	1090	1010	1460	1366

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPM

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

104.01	104.02	105.01	105.02	106.01	106.02
7/18/78	7/18/78	7/ 7/78	7/ 7/78	7/ 7/78	7/ 7/78
743.0	743.0	744.0	744.0	744.0	744.0
89	89	67	67	67	67
92	92	73	73	73	73
2800	2800	2800	2800	2800	2800
125.4	125.4	51.0	51.0	20.4	20.4
67.1	67.1	27.0	27.0	10.8	10.8
32.8	32.6	18.8	18.8	14.5	14.5
30.0	30.0	47.0	47.0	47.0	47.0
6.5	6.5	13.5	13.5	16.5	16.5
31.0	31.0	19.8	19.8	16.0	16.0
219	219	250	250	261	261
5023	0776	1350	0007	4240	0963
14.53	15.01	13.73	13.97	14.28	14.97
.61	.19	1.77	1.57	.73	.02
1160	52	970	42	2496	57
1183	361	889	856	227	48
14.91	14.91	15.92	15.94	14.86	14.78
982.8	151.6	164.6	.8	371.7	83.5
113.9	5.1	59.4	2.6	109.9	2.5
408.5	124.4	172.3	165.2	31.6	6.6
225	225	236	236	232	232
40	40	40	40	40	40
192	192	192	192	191	191
67.0	55.0	28.0	19.0	18.0	10.0
1359	1318	1224	1138	1226	1140

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO₂, %

O₂, %

HC, PPM

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H₂O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

107.01	107.02	108.01	108.02	109.01	109.02
7/ 7/78	7/ 7/78	7/ 7/78	7/ 7/78	7/18/78	7/18/78
744.0	744.0	744.0	744.0	743.0	743.0
67	67	67	67	89	89
73	73	78	78	81	81
2800	2800	3200	3200	3200	3200
9	9	136.0	136.0	112.8	112.8
5	5	82.3	82.3	69.0	69.0
11.8	11.8	48.4	48.4	34.9	35.0
47.0	47.0	16.0	16.0	36.0	36.0
17.7	17.7	1.9	1.9	8.0	8.0
12.5	12.5	47.0	47.0	33.0	33.0
271	271	256	256	223	223
3087	0008	3.3844	3.3756	7884	7421
13.88	14.50	12.74	12.78	14.08	14.26
1.34	.71	.11	.03	.50	.16
3734	52	1692	838	1258	370
136	154	426	301	1243	1097
15.20	15.29	13.32	13.34	14.71	14.59
225.9	.6	9078.1	9087.5	1658.0	1558.8
137.2	1.9	228.0	113.3	132.9	39.1
15.8	18.0	181.7	128.8	461.3	406.7
226	226	241	241	234	234
40	40	40	40	40	40
191	191	192	192	193	193
15.0	7.0	120.0	90.0	72.0	52.0
1218	1136	1474	1384	1340	1281

ENGINE: 1978 FORD 300-CID

FUEL CODE: 7718

TEST NUMBER

DATA SOURCE CODE

TEST DATE

BAROMETER, MMHG

HUMIDITY, GRAINS/LB

TEMPERATURE, F

ENGINE SPEED, RPM

TORQUE, FT-LB

POWER, BHP*

FUEL RATE, LB/HR

IGNITION TIMING, DEG BTDC

MANIFOLD VACUUM, IN HG

THROTTLE ANGLE, DEG

INTAKE MAN. TEMP., F

CONCENTRATIONS, DRY BASIS

CO, %

CO2, %

O2, %

HC, PPMC

NOX, PPM

AIR/FUEL RATIO

EMISSION RATES, G/HR

CO

HC

NOX+

OIL TEMPERATURE, F

OIL PRESSURE, PSI

COOLANT TEMPERATURE, F

EXHAUST PRESSURE, IN. H2O

EXHAUST TEMPERATURE, F

* CORRECTED SAE J816B

+ CORRECTED FOR HUMIDITY

111.01	111.02	112.01	112.02	113.01	113.02
7/ 7/78	7/ 7/78	7/ 7/78	7/ 7/78	7/18/78	7/18/78
744.0	744.0	744.0	744.0	743.0	743.0
77	77	77	77	89	89
80	80	79	79	91	91
3200	3200	3200	3200	3400	3400
18.1	18.1	.8	.8	177.0	177.0
11.0	11.0	.5	.5	115.1	115.1
16.5	16.5	14.1	14.0	65.1	65.0
48.0	48.0	48.0	48.0	18.0	18.0
16.5	16.5	18.0	18.0	.8	.8
17.0	17.0	14.8	14.8	80.0	80.0
253	253	244	244	166	166
1698	.0007	.2089	.0009	5.9000	6.1000
13.84	14.16	13.09	14.17	11.42	11.42
1.56	1.28	2.71	1.31	.01	.00
1716	49	7422	101	1755	1094
370	394	194	215	625	525
15.65	15.71	15.83	15.72	12.31	12.29
178.5	.7	189.3	.8	19828.9	20328.0
90.6	2.6	337.8	4.5	296.2	183.1
64.6	68.7	29.2	31.9	370.7	308.8
234	234	229	229	224	224
40	40	40	40	40	40
192	192	190	190	198	198
23.0	15.0	18.0	10.0	170.0	125.0
1255	1160	1218	1214	1424	1335

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